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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

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AMERICAN IRON AND STEEL ASSOCIATION REPORT.

The annual statistical report of the American Iron and Steel Association for 1900 is now being distributed. Full details are given in its pages of the production of iron ore and the various forms of iron and steel in the United States in 1900 and immediately preceding years, the shipment of iron ore from the Lake Superior and other mines, the imports of Cuban and other iron ore, the production of coal and coke, and the imports and exports of iron and steel and coal and coke, the production of manganese ore, the prices of Lake Superior iron ore, the prices of iron and steel, the tonnage of iron and steel vessels built in 1900 and 1901, immigration in 1900, etc.

Forming a part of the report and occupying twenty-eight pages, is a paper prepared for the United States geological survey, which is devoted to a review of the progress made by the world's iron and steel industries down to the close of the Nineteenth Century. A valuable feature of this paper is a chronological record of the development of the iron and steel industries of the United States from 1619 to 1900, giving the principal events in that development and a summary of the grand results. The author is James M. Swank, 201 Fourth street, Philadelphia, Pa.

IRON SMELTING BY ELECTRICITY.

In a recent article the *Echo des Mines et de la Metallurgie* says that three electric furnaces of 500 horse-power each have been erected in the valley of Camonica, Northern Italy, for the manufacture of pig iron under the Stassano patent. In these furnaces the electrodes are placed at the bottom of the boshes. In the operation of the furnaces the ore is first pulverized; a sample is then analyzed for the purpose of calculating the amount of carbon required to perform the reduction, as well as the necessary amount of fluxes. The quantities of carbon, lime or silica thus determined are pulverized and mixed with the ore. The material is then briquetted, after adding 5 to 10 per cent. coal tar, and is ready for charging into the furnace. By means of the heat developed around the electric arc the iron ore is decomposed, the oxygen uniting with the carbon to form CO₂. The latter gas ascends into the upper part of the furnace, where it effects a partial reduction of the ore. To obtain a ton (metric) of metal, 3,000 horse-power hours are said to be required, costing 18 francs.

CANADIAN ASPIRATIONS.

The possibility of a fast line of steamers, with a speed of 21 knots, with the port of Quebec as the summer terminal, is now, it is claimed, practically assured. Negotiations, it is said, have been going on for some time past between the Imperial Government and the Canadian Government on the subject, and an understanding has almost been come to. The Canadian Government has already commenced to inquire into the facilities for such a line at Quebec, and next week will send engineers to make a thorough study of the situation, and an appropriation for improvements in the harbor of Quebec may be brought down during the sitting of the next Parliament at Ottawa.

The names of the promoters of the new fast line have not yet been made public, but it is rumored that Sir Christopher Furness is at the head of the syndicate.

It seems certainly evident that the St. Lawrence will be used for navigational purposes, more in the future than in the past.

IN HIS message which was submitted to Congress on Tuesday, Dec. 3, the President of the United States made the following recommendation: "There should be created a Cabinet officer to be known as Secretary of Commerce and Industries, as provided in the bill introduced at the last session of the Congress. It should be his province to deal with commerce in its broadest sense, including among other things, whatever concerns labor, and all matters affecting the great business corporations and our merchant marine. The course proposed is one phase of what should be a comprehensive and far-reaching scheme of constructive state-manship for the purpose of broadening our markets securing our business interests on a safe basis and making firm our new position in the international industrial world, while scrupulously safeguarding the rights of wage-workers and capitalists, of investors and private citizens, so as to secure equity as between man and man in this republic."

WIRELESS TELEGRAPHY OF LONG AGO.

Long before the dawn of the Christian era wireless methods of communicating intelligence to a distance were employed, not electric telegraphs as the term is generally understood, it is true, but wireless they certainly were.

Polybius, the Greek historian, describes a telegraph system employed for military purposes, 300 B. C., in which torches were placed on high walls in prearranged positions to correspond to letters of the Greek alphabet, and by a suitable manipulation of the torches messages were thus transmitted to a distance. The Gauls, too, were wont to transmit important intelligence to a distance by a crude but simpler method. A messenger was sent to the top of a hill, where he shouted his message, apparently to the winds. Soon from afar a remote voice answered him, and his voice repeated the message to another listener further on, and thus, from one to another, the message sped, and it is recorded that in three days a message calling all the tribes of the Gauls to arms, traveled in this way from Auvergne to the forests of Amoric in one direction, and to the banks of the Rhine in another.

Later on came another wireless telegraph system—the semaphore telegraph and this was in operation all over Europe prior to, and for some time after, the introduction of the electric telegraph. This semaphore telegraph employed arms on posts akin to those seen to-day along every railway in the world, and a certain position of the arms, like the torches in the Polybius system corresponded to certain letters of the alphabet, and by varying the position of the arms as required, experts were able to transmit messages from one station to the other at the rate of two or three words per minute. The towers on the top of which the semaphores were erected were often 50 to 60 feet high, and were placed on eminences about six or eight miles apart. In Russia alone there was a string of these towers from the Prussian frontier to St. Petersburg, a distance of 1,200 miles or more.—Wm. Mayer, Jr., in *Cassier's Magazine* for January.

ASTOR'S NEW STEAM TURBINE.

Col. John Astor has designed a new steam turbine which it is expected will be an improvement over the famous Parson's engine. The *Scientific American* gives the following account of the engine.

"The Astor turbine is distinguished broadly from the best known existing forms by the fact that it has no stationary parts other than the journals and foundation frames which carry it, the casing of the turbine revolving as well as the shaft, but in an opposite direction. The general construction of the motor consists of one interior shaft which extends from the forward journal through the rear propeller. Upon this shaft is formed a series of spiral blades, which have a steady admission end of the turbine to the rear exhaust end. The shaft and blades rotate within a flaring, funnel shaped casing, around the inner surface of which is formed another series of spiral blades, also increasing in diameter, whose twist is in the opposite direction to that of the blades on the shaft, the two set of blades or vanes being respectively right and left handed. The tubular casing is drawn down at the exhaust end to form a hollow shaft, which incloses the central shaft, and extends through the deadwood and the sternpost. The propellers are right and left handed to match the direction of the blades of the respective shafts to which they are keyed, the two propellers thus rotating in opposite directions.

"The casing increases in diameter at the proper rate to secure an even rate of expansion of the steam, which is conducted from the exhaust through a length of piping formed to the keel of the launch, the keel thus being made to serve the purpose of a condenser. The condensed steam collects in a well from which it is drawn by the boiler feed pump. Steam is admitted to the forward end of the turbine, and, striking on the two set of blades, the shaft is rotated to the right and the outer movable casing to the left, the respective propellers being, of course, driven in corresponding directions."

THE United States Civil Service Commission, Washington, D. C., announces that on January 21, 22, 23, 1902, an examination will be held at various places throughout the country for the position of marine draftsman, light-house service and other similar ones as they may become vacant.

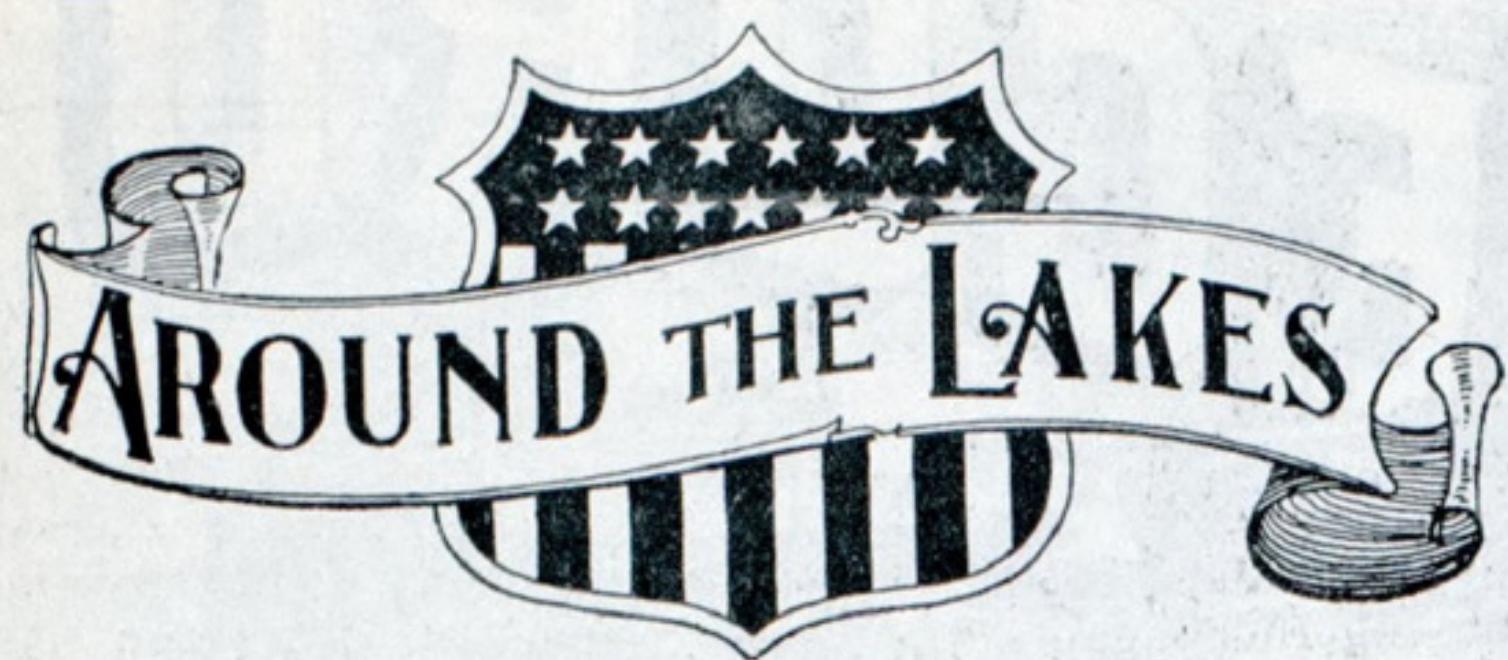
IMPROVEMENTS IN THE WEATHER SERVICE.

Marine interests have frequent occasion to acknowledge indebtedness to the Weather Bureau as it is managed under Chief Willis L. Moore. He has been interested in the development of wireless telegraphy as applied to shipping, and his experiments have been of great value. In his annual report he says that the line of research has been divided into three classes: First, the perfection of a more powerful transmitter, in which the energy of radiation shall be greatly increased; second, the devising of a more delicate receiver, one that would be positive instead of depending upon an imperfect and variable contact, as do all systems now in use; and, third, the perfection of a system of selected telegraphy, whereby messages can be differentiated and only the receiver that it is desired shall receive the message becomes responsive to the waves of ether. The first of these problems may be said to have been successfully solved, and a transmitter devised capable of radiating all the energy generated; the second is believed to be nearing a successful solution; the third is thought to be well demonstrated theoretically, but has not been fully tested in practice.

An idea of the extent and completeness of the system may be obtained from the following:

"The bureau has 315 paid temperature and rainfall reporters daily telegraphing data from the growing fields to certain cotton, corn and wheat centers. It has 250 storm-warning displaymen distributed among the ports along the Atlantic, Gulf and Pacific coasts, and in the Lake region. It has 3,000 volunteer observers—nearly one for each county in the United States—equipped with standard thermometers, instrument shelters and rain gauges, who have for years intelligently served the Government by taking daily weather observations and rendering weekly crop reports to State central offices. There are 14,000 persons reporting weekly to the climate and crop centers, as to the effect of weather upon the crops in their respective localities. These voluntary crop correspondents could quickly be increased in number to several hundred thousand if occasion required. The distribution of forecasts by rural free delivery, Mr. Moore says, has become decidedly popular. There are now in operation 365 centers supplying an aggregate of nearly 42,000 families in the farming districts with the latest weather predictions.

On the 16th inst., the United States Senate, by a vote of 62 to 6 ratified the Hay-Pauncefote treaty, which clears the way for the construction of an isthmian canal by the United States, consenting to the right of this country to have full control of the channel and establish rules of operation and means for its defense. The treaty abrogates the Clay-Bulwer treaty between the United States and Great Britain, at least so far as it relates to the construction of the canal. The United States guarantees non-discrimination tolls and may exclude all ships which do not conform to the established rules.



BUFFALO.

Special Correspondence to The Marine Record.

It is slow work getting grain out of the forty or more vessels lying here to discharge. The elevators are filled and can't get cars to ship out owing to the eastern traffic being impeded by the floods of the last week. It now looks as if it would be well along in January before the last cargo is stored in the elevators.

According to bills of sale placed on record at Buffalo the Atlantic Coast Steamship Co., of which John L. Crosthwaite, of Buffalo, is president, has purchased the steel steamers Georgetown and Wacomaw, both of which are now engaged in the Atlantic trade. The Georgetown has been running between New York and Nassau. They had been held in the name of the Erie Railway Co.

John Foy, manager of the Niagara Navigation Co., is lying seriously ill at his residence in Toronto. Mr. Foy has been ailing from a complication for some months past. A few months ago he visited Seabright, on the New Jersey coast, and was much improved by his stay there. On his return he had a serious relapse from which he has not recovered. His condition is considered critical.

The steamer Mark Hopkins, which went shore above Long Point several weeks ago, will not be released this winter. Frederick Meyer, of the marine department of Smith, Davis & Co., the insurers of the boat, stated that a diver from Detroit had made an examination of the boat, but on account of the lateness of the season nothing could be done toward releasing the vessel. The Hopkins is well up on the Canadian shore and rests in a bed of quicksand. If the vessel does not disappear in the sand another effort will be made to save her in the spring.

The steamer North-Land has been libeled at the instance of the Western Assurance Co., of Toronto. The assurance company filed the libel because of a suit it has just begun against the owners of the craft and Frank and Lena Beadle, to recover \$2,803.19. The Beadles were owners of two canal boats, the Campania and Columbia. The Columbia is a propeller. Last June she was towing the Campania in Buffalo river when the North-Land collided with the Campania, sinking her. The assurance company had insured a cargo of oats in the Campania for \$3,670 and was forced to pay that amount because of the loss of the oats. The Beadles relinquished the boat to the underwriters, and all but the amount of the suit was recovered from the wreck.

It has been an open secret for a long time that the Northern Line boats, North-West and North-Land, had been failures as far as their boilers were concerned. They did not develop the speed that was expected of them, nor did they give satisfaction in other respects. Owing to the unsatisfactory boilers the boats were seldom on schedule time, and many of the explanations of being late that charged the fact to the fog or some other thing should have been charged to the boilers. Now the old Bellevue water tube boilers are to be taken out and Scotch boilers installed. It is expected that the North-West and North-Land next season will then develop something like the speed they were supposed to possess. While they have been rated twenty-mile boats, neither one of them has ever been equal to that speed, it is claimed, for any considerable distance, especially in shoal water.

Those who are well informed in lake matters say that the masters and pilots on the lakes are pulling in three directions with but little chance of success. One body is the Ship Masters' Association, which is the conservative element among the captains aiming more at closer relations among the masters than a united stand for better wages or conditions. Another is the Masters' and Pilots' organization, a body made up of masters and mates, which is more essentially a union in every sense of the word. The outside affiliation of this body and its strong tendency toward agitation of much mooted questions has brought it into disfavor with some of the more conservative members. Still a third is the one which it has recently been proposed to organize to take the place of the defunct Masters' Protective Association, which went to pieces last spring. It is now said that the object will be to pull the lake end of the Masters' and Pilots' organization away from the national body and form a lake union that will combine the functions of all three bodies. This matter will be discussed in Washington in January.

The new boilers for the North-West and North-Land will be built by the Lake Erie Boiler Works at Buffalo. They will be of the Scotch type and will be 12½ feet in diameter and 12 feet long. The hull work will be done by the American Ship Building Co. The changes will cost about \$175,000.

DETROIT.

Special Correspondence to The Marine Record.

Owing to an ice jam at the mouth of the river there is a high stage of water here this week.

Major W. L. Fisk, Corps of Engineers, U. S. A., advises that a revised chart in colors of Lake Superior has just been issued, also a revised chart of Lake Ontario, both of which may be obtained for 15 cents each at Campau Building.

The Board of Directors of the Detroit & Buffalo Steamboat Co., elected the following officers: President, Alexander McVittie, Detroit; vice president, Geo. W. Gardner, Cleveland; treasurer and general manager, W. C. McMillan, Detroit; secretary, Bert C. Wilder, Detroit.

The following meteorological observations are furnished by the office of the United States Weather Bureau, Detroit, for the week ending December 23rd: Prevailing wind directions for the week, southwest; highest velocity, 29 miles southwest on December 22nd; mean temperature for the week, 15 degrees; highest temperature, 35 degrees on the 24th; lowest, 6 degrees on the 21st.

The Great Lakes Towing Co. will make no effort to get the tug Boynton back to Detroit for the winter, she will remain at Amherstburg, where she is now being stripped of her machinery. The tug went down the river to assist the Watt in getting through the ice. Instead of being of assistance she was caught in the ice. She lay for several days making ineffectual attempts to get up the river again, but did not succeed. Now the ice jam has become so solid that all further efforts to break through it have been abandoned and the tug will lay up where she is.

Francis H. Clergue, President of the Lake Superior Power Co., contradicts the recently published statements in respect to shipbuilding at Sault Ste. Marie. Mr. Clergue declares that no plans for such an establishment have been made, nor had Sir Christopher Furness' recent visit to Sault Ste. Marie any connection with the order for twelve ships, which he is said to have taken back to England. Sir Christopher Furness, Mr. Clergue further says, has no connection with the steel plant nor the tube works at Sault Ste. Marie, and the visit of Sir Christopher to the "Soo" was only an incident in a comprehensive tour of the industrial countries of the United States and Canada. On being shown the above report a vesselowner here said that all things are possible, or appear so to Mr. Clergue at the "Soo," but nothing like shipbuilding will be started.

The slick work of Joseph Hayes at Cleveland, who is shore engineer for the Pittsburg Steamship Co., is being generally canvassed at this port, where, perhaps, the strongest lodge of Lake Engineers exists. It appears that he has been signing engineers for next season, the idea being to get them upon the same basis as the masters by giving them yearly contracts. The men are to get \$1,500 a year for the positions of first engineer and a commensurate salary for the other positions. The January pay is to be held back to the end of the year to assure a perfect performance of the contract on the part of the men. If any of them quit in the meantime, or if they default in their contract, the money for the January salary goes back to the company. That month the men are always idle. It is considered in marine circles that the contract is very deftly worded. The contracts have been promulgated without regard to the Marine Engineers' Beneficial Association, the men being treated with as individuals. The belief is that Mr. Hayes knew he was flying in the face of the union predilections of the men and put in terms which would protect the company. In fact the engineers themselves do not hesitate to say that every effort will be made to have the men who signed the contracts abrogate them, as they are considered to be out of keeping with the union spirit, which dictates that all contracts must meet the sanction of Mr. Uhler before being signed. The action of Mr. Hayes, therefore, is expected to bring out strong antagonism on the part of the engineers and to bring on a fight between Uhler and Hayes unless they work in conjunction.

Shipping.—Loss of Goods Through Negligence of Charterer.—Liability of Vessel.—A bark was chartered to a transportation company for a monthly hire, the charter providing that the company should have all available cargo space, should do all lightering, and be responsible for all damage or loss of cargo. Libelants with knowledge that the vessel was chartered, contracted with the company for the transportation of goods from Seattle to Dawson on the bark, "or any other vessel of the company, or on board of any vessel the company may employ," and to be shipped from St. Michaels upon the company's river boats. The goods were laden on the bark, which took them to St. Michaels. On reaching there it was found that the company had provided no means of lightering, had no river vessels to forward the goods, and there was no warehouse in which they could be stored, or person to receive them. After remaining there several weeks, by using the small boats and constructing lighters, the passengers and their effects and such cargo as there was any one to receive were landed, and the master returned to Seattle with libelants' goods on board. Held, that while the company was liable for damages caused by its gross negligence, there was no ground upon which the bark could be charged with negligence or liability for the breach of the company's contract. The Highland Light, 111 Fed. Rep. (U. S.) 195.

CHICAGO.

Special Correspondence to The Marine Record.

Milwaukee received in round figures 128,000,000 feet of lumber this season as compared with 140,000,000 feet last year.

Capt. Albert L. Poppe, formerly harbor master at Milwaukee, died on Monday from cancer. The late captain was well known among lake men and generally respected during his active service.

The schooner Frank C. Leighton brought \$5,500 at United States Marshal's sale on the 18th. Attorney Ray G. McDonald representing the libelants. W. S. Kelsey, who is connected with the firm of Joy, Morton & Co., was the purchaser. Capt. Benjamin Calhoun will continue to be master and she will be employed in the salt trade the coming season.

The following meteorological observations are furnished by the office of the United States Weather Bureau, Chicago, for the week ending December 25: Prevailing wind directions for the week, west; highest velocity, 38 miles from the south on the 22nd; mean temperature for the week, 14 degrees; highest temperature, 35 degrees on the 23rd; lowest, 8 degrees on the 20th.

The steamer Thomas Christie has been sold by Capt. P. Peterson, of Green Bay, Wis., to Capt. P. Larson and others, of this city. The steamer, which is now laid up at Toledo, will be cut down and converted into a lumber carrier and will trade next season between Menominee and Chicago. The Christie for many years was engaged in the ore, grain, and coal trade, but has ceased to be a money maker since the coming of the big steel carriers.

The business at the port of Waukegan shows an excellent increase for the past year. The report of the customs office shows a total tonnage received of 100,108, against 81,999 for last year. The arrivals this year numbered 656, against 480 last year. The exports increased from 1,000 tons last year to 4,675 tons. The largest receipt is in coal, 89,490 tons being received this year and 81,611 last year. The Barry Line steamer Grand Rapids handled 15,000 tons the past season.

A launch from the South Chicago yards of the American Ship Building Co. on the Calumet, will take place next Saturday, at which time the big steel steamer A. G. Brower will be put afloat. The Brower is built on the order of the United States Transportation Co. and will be engaged principally in the bulk cargo traffic. The new boat is 346 feet long, 48 feet beam, and 26 feet deep. Appropriate christening ceremonies will mark the launching of the new vessel. Three other boats are also nearing completion at the South Chicago yards.

Although there is a big fleet of vessels to store grain during the winter and carry it to Buffalo in the spring, no business has yet developed of importance, owing to prices in the grain trade. Four steamers have been chartered for wheat to Albert Dickinson at 3c per bushel, but the charter provides that the shipper has the option of unloading the boats anywhere in Chicago river. It is claimed that the terms of the charter make the boats simply warehouses. As one or two of them have been loaded up the north branch and are likely to be ordered at any time up the south branch, there will be trouble when they try to get across Washington street tunnel, as they draw at least a foot too much water for that obstruction.

While at Ludington harbor on Saturday night, during a heavy southerly gale, the Pere Marquette car ferry No. 16 struck a bar, disabling her machinery and breaking the main feed steam pipe. Mike Taft, a coal passer, whose home was at the port, was scalded to death and two other coal passers were terribly scalded. Many others received bad burns from the steam and suffered great hardships during the nine hours which followed before they were rescued. It is feared that the No. 16 will prove a total loss. An attempt will be made to pump her out, but unless weather conditions are favorable it will be almost impossible. Great banks of ice surround the boat on all sides. Boat and cargo are valued at \$200,000 and are fully insured. The most strenuous efforts will be made to get her into port, and as she is in about three fathoms of water the chances are in favor of floating her if the weather remains moderate and no more ice is made.

I learn that the H. W. Johns Manufacturing Co., of New York, and the Manville Covering Co., of Milwaukee, each company having been closely identified as handling the goods manufactured by the other, have consolidated their interests. This consolidation is to take effect January 1. The new company, whose capital stock will be \$3,000,000, will be known as the H. W. Johns-Manville Co. The officers of the new company will be: Mr. T. F. Manville, president; Mr. C. B. Manville, vice-president; Mr. George W. Gladwin, vice-president; Mr. F. R. Boock, treasurer, and Mr. H. E. Manville, secretary. Mr. James G. Cannon will be chairman of the Board of Directors. Mr. C. R. Manville will be manager of the Western department, and he, with Mr. C. B. Manville, will remain in Milwaukee. Mr. T. F. Manville and Mr. H. E. Manville will remove to New York. The new company is rapidly completing a plant at Milwaukee for the manufacture of carbonate of magnesia and mineral wool. When this plant is completed, the company will be prepared to furnish a most complete line of all grades of steam pipe and boiler covering and asbestos goods of all descriptions.

The Edward Hines Lumber Co., of Chicago, has absorbed the business of the Arthur Gourley Co., the transaction amounting, it is reported, to \$400,000. The yards of the two companies adjoin each other and together constitute without question the largest stock of lumber under one ownership anywhere. The river frontage operated amounts to half a mile and there is piling room on the premises for 75,000,000 feet of lumber, with loading tracks accommodating 175 cars and a planing mill of 450,000 feet daily capacity. The total amount of money represented in the consolidation exceeds, according to printed statements, \$400,000. In the palmy days of Chicago's fame as a lumber market, 50,000,000 feet of stock, or thereabouts, was once carried there by the old Chicago Lumber Co., and at the time this was considered unmatched in the city's history.

The large steel schooner Australia, belonging to the Corrigan fleet, of Cleveland, will be converted into a steamer during the winter at the Shipowners' Dry-dock in the north branch. Two Scotch boilers will provide steam. The engines will be the same as placed in the Aurania when that schooner was converted into a steamer two years ago. The bunkers will have a capacity of 300 tons. The Australia will also be equipped with a steam towing machine. She is to be ready for service April 15. This is the first steel work done in the Chicago river in ship construction. The Australia was built in 1897 and is 376 feet keel by 48 feet beam. The change is another mark of the fashion for single steamers in lake traffic in preference to big towing barges, though it is likely that the Australia will have a consort or two to plug along most of the time.

It is learned that The Kirby Carpenter Co. has sold the of its lumber and will close its lumber office and retire from business in Menominee January 1. There is still some lumber left in the yards, which has not been sold, and watchmen will be kept to look after this. They will be the sole employees of a concern which formerly had from 500 to 800 men on the pay roll. The Menominee River Lumber Co. is also winding up its business as rapidly as possible. The Kirby Carpenter Co. has disposed of most of the tramways in its yards. There were about 5,000,000 feet of lumber in them and they were sold to various parties in Wisconsin and Illinois to be used again as trams in lumber yards. There will be considerable lumber work done at Menominee this winter and the cut is now figured at about 30,000,000 feet. The Bay Shore Lumber Co., The N. Ludington Co. and the Sawyer Goodman Lumber Co., will cut about an equal amount. Burns & Hicks will also contribute about 7,000,000 feet more.

DULUTH-SUPERIOR.

Special Correspondence to The Marine Record:

M. L. Fay, of Virginia, Minn., is one of the most vigorous hustlers after iron ore in the state. He has a number of important propositions on hand, of which he is carrying the load alone, and some in which others are also interested.

Mr. A. B. Wolvin says that the gossip about chartering for the ore delivery in 1902, as far as the United States Steel Corporation is concerned, is a little premature. "You may say," he said in answer to a question, "that the Steel Corporation is not likely to do any chartering for some time to come." The annual meeting of the Lake Carriers' Association, of which Capt. Wolvin is president, will be held in Detroit, beginning January 14 and lasting for three days.

This winter is likely to witness the heaviest movement of lumber by rail that has taken place in many years. It is now estimated that it will approach 50,000,000 feet, if the cars can be procured. The car supply is bound to be an important factor this winter, for the local railway officials claim that there is not yet in sight any relief for the present car shortage. Estimates of the unsold stock at the head of the lakes run from 20,000,000 to 30,000,000 feet, and there is no great eagerness evinced to sell so that prices are likely to advance.

The figures just compiled at the custom office of Superior and Duluth show that the total lumber shipments from the Superior-Duluth harbor for the season were 370,204,775 feet as compared with 234,001,000 feet a year ago. Adding to the shipments from Superior and Duluth those of Two Harbors the grand total of shipments for the season of 1901 was 382,180,775 feet, or 30,000,000 feet more than conservative estimates made during the season. The shipments of lumber during the past season have established a new record for the head of the lakes and are worth quoting as statistics in the world's commerce.

The constantly changing vessel taxes of various States touching on the Great Lakes is likely to result in the end in the establishment of a national instead of a state tax on vessel property. This year, though West Superior gained but little from the lower tax, which allowed boats to be registered without being forced to pay an almost prohibitive charge for the privilege, the port has been much the gainer in the amount of ship repairing to be done. Last year there was hardly any repairing to be done here. This year there are sixty boats laid up, on each of which will be done work varying from \$1,000 to \$5,000, in addition to some boats on which there are big contracts for repair work.

CLEVELAND.

Special Correspondence to The Marine Record.

Lorain's winter fleet is as follows: Barges Krupp, Carrington, Corliss, Martha, Marcia, and Manila. Steamers Empire City, Joliet, Wawatam, Zenith City, Thomas Wilson, Reese. Schooners Three Brothers, E. T. Judd, Siegel.

The first meeting of the season of the local lodge of the Shipmaster's Association was held last week. Many of the members are still busy laying up their ships and the attendance was small. Next Friday officers will be elected for the coming year.

The Reade Machinery Co., builders of machine tools for boiler, bridge and architectural iron works and shipyards, has issued a circular descriptive of the punch with 20-inch jaw. Machine will punch 1 1/4 through 1 inch and shear 6 inches by 1 inch. The punch is built up to 36-inch throat.

The United States Steel Corporation has not yet stated terms for next season or charters, and likely will not until after holidays. Owing to the great detention experienced by vessels during the past season a raise of 10 cents per ton is looked for, making the Lake Superior rate \$1 instead of 90 cents.

The steamers Frontenac, Pontiac, Andaste and Falcon, of the Cleveland Cliffs Co., are laid up in the river bed. General repairs are being done on this fleet by William Sweeney the well known ship carpenter of Whiskey Island. He is to put a new floor and ceiling in the Pontiac after the rail repairs on the Frontenac are completed.

A strong effort is to be made to prevent any friction between the vessel men in general and the Marine Engineers' Beneficial Association as a result of the action of the Pittsburg Steamship Co. in entering into contracts with its employees. The Pittsburg Steamship Co.'s officers do not deny that they prefer to treat with the men as individuals rather than as members of an organization.

The announcement made by Joseph Hayes, Chief Engineer of the Pittsburg Steamship Co., that he now has enough engineers under contract to run the fleet all next season, is questioned among the lake engineers not in the employ of the great corporation. The assertion, coming in the face of the announcement of the M. E. B. A., that the signing of such documents by the marine engineers is without sanction, makes the matter interesting.

The following meteorological observations are furnished by the office of the United States Weather Bureau for the week ending December 25th: Prevailing wind directions during the week, southeast; highest velocity, 34 miles from the south on the 22nd; mean temperature for the week, 20 degrees; highest temperature, 37 degrees on the 24th; lowest, 6 degrees on the 21st. Sunrise and sunset data computed for local time: December 27th sun rises, 7:28, sets, 4:36; December 30th sun rises, 7:29, sets, 4:38; January 2nd sun rises, 7:29, sets, 4:41.

The Engineers' Lodge are in possession of a charter granted by the International Longshoremen's Association. A member of the local lodge said that the Association was opposed to the contract of the Pittsburg Steamship Co. It is all one-sided, he said, and not fair. One member admitted that he signed the contract, but said that he did not understand what he was doing. President Uhler, of the Engineers' Association will not be able to visit the lake ports until after the annual convention, which will be held at Washington about the middle of next month.

In is now learned that the delegates to the Grand Lodge of the American Association of Masters and Pilots will go to Washington two or three days prior to the opening of the session of the lodge to discuss the lake situation. The plans to be discussed were outlined at the meeting of local 42, of Cleveland, Monday night. It is proposed that the representatives shall discuss which is better: to have a separate lake organization, closely affiliated with the national body, or have the national body as such legislate conditions and wages for the lake men. It is no secret longer that the masters and pilots on the lake prefer a separate organization. They claim that strictly local action must be taken in order to find a cure for some of the ills which have crept into the lake marine business.

The river customs house closed for the season on Saturday last. It will not be opened again until the resumption of traffic on the lakes in the spring. The force that has been employed along the river during the summer will in all probability be connected with the main office during the winter. J. C. Carroll was in charge on the river the past season assisted by E. A. Brumbaugh in the daytime. E. L. Pardee managed the office at night. A more accurate, courteous, and faithful corps has seldom administered the affairs along the dock, and the approval of the vessel masters of their conduct has been unanimous the season through. Mr. Carroll has been with the service a number of years. Mr. Brumbaugh was formerly a school teacher and this was his first season on the lakes. Mr. Pardee is a veteran of the civil war and a prominent member of Memorial Post, G. A. R. Especial credit is due the night officer, Mr. Purdee, for his prompt, efficient and faithful service at all hours of the night. From all accounts Capt. Pardee is certainly entitled to promotion in the service or at least should be given a competent assistant during the busiest portion of the season.

The Minnewaska, sister ship to the Minnetonka, was launched here on Saturday, Miss Kate Crowell performing the christening ceremony. The steamers which were ordered last January by eastern capitalists represented by Charles E. and W. F. Peck, were built for ocean trade, and they will leave for the coast as soon as they get through next spring. The boats will have to be cut in two in order to take them through the canals, and they will be put together again at Montreal. The steamers are 450 feet over all, 430 feet keel, 43 feet beam and 35 feet deep. They will have four Scotch boilers, each fitted with Howden forced draft and triple expansion engines capable of developing about 3,000 horse power. The new ships will cost about \$450,000 each. They will carry 7,000 tons of cargo, with about 1,000 tons fuel capacity on 25 1/2 feet draught at ten knots speed.

Since the steamer Kewanee, which did lightship duty on Southeast Shoal, Pelee Passage, Lake Erie, reached this port the Lake Carriers' Association has had time to compute the cost of it and there is a strong desire on the part of the committee to have the Light-House Board take charge of the boat. Concerning the status of this matter, however, very little is being said at this time. The officers of the Lake Carriers' Association have collected all of the available data and have sent to the officials at Washington, even computing the comparative cost of a lightship and a lighthouse and the possibility of maintaining each. They have gone so far as to recommend the lightship as the only feasible means, because of the nature of the subsoil. It is beyond question that some aid must be maintained at this point to ensure the general commerce of the lakes, and it is entirely out of reason to tax personal interests for national welfare.

The annual meeting of Local No. 42, of the American Association of Masters and Pilots, was held on Monday night at their rooms on Superior Street. Aside from the election of officers for the year it is understood that matters of much importance were discussed. At the close of the meeting it was announced that many of the masters who have not hitherto been affiliated with the organization placed their names upon the rolls and were initiated. The national convention of the order will be held in Washington, beginning January 6. A delegate, in the person of the captain of the harbor, was appointed to attend. It has been known for several days that the local association was in possession of a letter from the Grand Lodge, asking that the delegate be sent to Washington instructed as to the attitude of the lake men toward a change in the constitution. Of late the complaints from the lake end of the organization have been pouring into the national offices as to the treatment of the masters and pilots on the chain of lakes. These complaints have been so severe at times that it has been suggested that some special legislation be enacted to meet the contingency. It has been suggested that a scale of wages be arranged for the lake masters, which shall be fought for by all of the members of the organization. This is one alternative. The other is that the lake end of the organization shall be separated from the main body and become an organization with the right to legislate upon affairs which are purely local. It was suggested that the delegates be sent to Washington instructed as to how to vote upon these questions. The officers elected at the meeting were: Captain, A. H. McLachlan; first pilot, W. E. Moore; second pilot, Frank Place; captain's clerk, Charles Hinman; purser, L. T. Brogan; delegate to Grand Lodge, A. H. McLachlan; alternate, James Buchanan; trustees, A. H. McLachlan, C. A. Benham, and Charles Hinman.

FLOTSAM, JETSAM AND LAGAN.

The Mary C. Elphicke and the Harvey H. Brown are the only boats in winter quarters at Fairport outside of tugs and some small local tonnage.

The steel steamer Katahdin, which was built by F. W. Wheeler at Bay City, has been sold by H. W. McCormick and others, of Bay City, to the Export Lumber Co., of New York. The price was about \$115,000. The Katahdin has been operated on the coast for the past three years in the coal trade. She will carry lumber from Georgetown to New York.

Marine men consider the shipment to Ohio ports of 160,000 tons of Canadian ore as significant. Late in the season of navigation of 1900 one cargo came over, consisting of upwards of 5,000 tons. This season a number of the Clergue boats—mostly those which came over from England—have been plying between Michipocoten and Ashtabula with a couple of cargoes to Cleveland.

Sheboygan, Wis., has begun to plan for a larger harbor. The Citizens' Improvement Association's committee is preparing to call a public meeting, at which efforts will be made to improve the dockage facilities and to aid shipowners in every way possible. If something is not done, it is urged, the neighboring city of Manitowoc will soon far outstrip its larger rival in a marine way. Even now there are some vesselmen who prefer to winter at Sheboygan because of the crowded condition of the harbors at Racine, Chicago, and Milwaukee, and even in preference to Manitowoc, with all its great facilities. Steps for the improvement of fire-fighting facilities will be urged, as captains would naturally prefer to lay up their boats where insurance is low and all facilities offered for the handling and protection of floating property.

SEASON'S LOSSES.

Canadian tug Tecumseh, May 3, 83 tons, foundered in Lake Huron; loss \$6,000.

Schooner Fostoria, May 10, 237 tons, sunk by ice in St. Clair river; loss \$1,000.

Passenger steamer Bon Voyage, May 10, 500 tons, burned in Lake Superior; loss \$13,000.

Steam yacht Nymph, May 11, 47 tons, ashore in Lake Erie; loss \$16,000.

Tug Cora, May 12, 14 tons, burned at Detroit; loss \$3,600.

Schooner Narrangansett, May 13, 316 tons, foundered in Lake Huron; loss \$1,200.

Schooner Montmorency, May 22, 298 tons, ashore in Saginaw Bay; loss \$1,000.

Steamer Baltimore, May 24, 1,160 tons, foundered in Lake Huron; loss \$40,000.

Schooner George Davis, May 24, 93 tons, ashore in Saginaw Bay; loss \$1,000.

Tug Constance, May 24, 31 tons, destroyed by collision at Menominee; loss \$4,000.

Schooner Little Georgy, May 25, 52 tons, ashore in Lake Michigan; loss \$600.

Schooner H. Rand, May 24, 124 tons, waterlogged in Lake Michigan; loss \$1,100.

Canadian steamer Hero, June 14, 342 tons, burned at Belleville, Ont.; loss \$10,000.

Steamer Hennepin, June 27, 1,372 tons, burned at Buffalo; loss \$45,000.

Tug Fern, June 28, 48 tons, foundered in Lake Superior; loss \$6,000.

Steamer Avon, June 30, 1,702 tons, burned at Sault Ste. Marie; loss \$30,000.

Canadian steamer Alberta, July 7, 68 tons, ashore in Lake Huron; loss \$2,500.

Tug Sir Luke, July 10, 23 tons, ashore in Green Bay; loss \$3,000.

Whaleback barge Sagamore, July 29, 1,601 tons, sunk by collision in St. Mary's river; loss \$80,000.

Schooner Smith & Post, Aug. 7, 212 tons, burned on Lake Erie; loss \$2,500.

Steamer George Sauber, Aug. 21, 42 tons, sunk by collision in St. Clair river; loss \$2,000.

Steamer Eliza Strong, Aug. 31, 781 tons, waterlogged in Lake Superior; loss \$32,000.

Schooner Driver, Aug. 31, 137 tons, capsized in Lake Michigan; loss \$1,000.

Canadian steamer John Long, Sept. 3, 201 tons, burned in Meldrum bay; loss \$12,000.

Schooner Amaranth, Sept. 7, 272 tons, ashore in Lake Huron; loss \$2,000.

Schooner Sea Gem, Sept. 10, 103 tons, ashore near Charlevoix; loss \$1,000.

Schooner G. Ellen, Sept. 16, 85 tons, waterlogged in Lake Michigan; loss \$400.

Schooner Jupiter, Sept. 16, 253 tons, waterlogged in Lake Huron; loss \$2,000.

Steamer Hudson Sept. 16, 2,294 tons, foundered in Lake Superior; loss \$160,000.

Steamer City of Cleveland, Sept. 19, 1,610 tons, ashore in Georgian Bay; loss \$55,000.

Steamer Fedora Sept. 21, 1,848 tons, burned in Lake Superior; loss \$85,000.

Tug Empire, Sept. 20, 51 tons, burned in Detroit river; loss \$2,800.

Schooner Ella Ellinwood, Sept. 29, 157 tons, ashore near Milwaukee; loss \$1,800.

Steamer M. M. Drake, Oct. 2, 1,102 tons, foundered in Lake Superior; loss \$35,000.

Schooner Michigan, Oct. 2, 1,056 tons, foundered in Lake Superior; loss \$19,000.

Schooner Mont Blanc, Oct. 13, 288 tons, foundered in Lake Erie; loss \$3,500.

Schooner Elvina, Oct. 13, 296 tons, sunk in Thunder Bay, Lake Huron; loss \$2,000.

Schooner William Stone, Oct. 13, 185 tons, ashore in Straits of Mackinaw; loss \$4,000.

Steamer State of Michigan, Oct. 18, 736 tons, sunk in Lake Michigan; loss \$18,000.

Steamer Swallow, Oct. 19, 256 tons, foundered in Lake Erie; loss \$12,000.

Schooner Montgomery, Oct. 19, 709 tons, waterlogged in Lake Superior; loss \$6,000.

Schooner C. Michelson, Oct. 30, 137 tons, ashore in Green Bay; loss \$2,000.

Steamer A. T. Taylor, Nov. 7, 103 tons, burned at Grand Haven; loss \$10,000.

Schooner Eureka, Nov. 8, 338 tons, waterlogged in Lake Huron; loss \$2,000.

Schooner George Irving, Nov. 10, 73 tons, waterlogged in Lake Huron; loss \$700.

Schooner Peoria, Nov. 12, 167 tons, ashore in Lake Michigan; loss \$2,000.

Steamer Porter Chamberlain, Nov. 13, 279 tons, burned in Georgian Bay; loss \$10,000.

Schooner H. J. Webb, Nov. 13, 431 tons, burned in Georgian Bay; loss \$7,000.

Schooner Marine City, Nov. 15, 337 tons, foundered in Lake Huron; loss \$2,000.

Steamer Elfin Mere, Nov. 16, 1,054 tons, burned in Green Bay; loss \$40,000.

Tug Keystone, Nov. 19, 94 tons, burned at Ashland; loss \$15,000.

THE FLOATING DOCK AT ALGIERS.

The new floating dry dock stationed opposite New Orleans, La., is the largest dock of its kind in the world, and was constructed from English plans by the Maryland Steel Co., at Sparrow Point, Md. Its general dimensions are as follows: Length over all, 525 feet; breadth over all, 126 feet, 2 7-16 inches; breadth between the walls, 100 feet; depth over sills, 28 feet; depth over pontoons, 17 feet, 6 inches; height of keel blocks, 4 feet; maximum draught, 50 feet; number of pontoons 3; length of middle pontoon, 242 feet; length of end pontoons, 141 feet, 3/8 inch; length of walls, 395 feet 5/8 inch; width of walls, 12 feet 1 1/8 inches; clearance of walls and pontoons, 2 feet; freeboard of walls, 28 feet—on sills, 4 feet, 9 inches; number of keel blocks, 209; weight of dock, 6,122 tons.

It is capable of lifting a ship of 15,000 tons to a height of 2 feet above the water, or of sustaining a vessel of 18,000 tons with the deck awash.

SUBMARINE CONNECTION DESIRED.

An effort will be made during the present Congress by Senator McMillan and Congressman Bishop to put through the bill authorizing the construction of a submarine cable between Glen Haven and South Manitou Island. Vesselmen around the lakes are much interested in the success of the bill, on account of the great importance of the South Manitou harbor as a port of shelter for their vessels during stormy times.

As many as five hundred vessels put into this natural harbor for shelter during the season, and owing to its inaccessibility a week often elapses before the owner can be assured of the safety of his boat. At present the only communication between the island and the main land is by means of small boats, and during times of storm, when information is most needed, they are obliged to remain in the harbor.

The loss of life and property because of vessels stranding on the Manitous and adjacent islands in the past has been large owing to the fact that succor could not be secured immediately, and the new line would be especially valuable in conveying intelligence of wrecks to the new life-saving station at Sleeping Bear Point, situated on the main land directly opposite the island.

EASTERN FREIGHT REPORT

Messrs. Funch, Edye & Co., New York, report the condition of the Eastern freight market as follows:

The activity from the Atlantic cotton ports, referred to in our last report, seems to have pretty well subsided, charterers having secured sufficient prompt tonnage to meet the existing demand, and are now indifferent about taking up further steamers for later positions.

The supply of available tonnage is quite sufficient to cover present requirements, not only for cotton but for general trades, and we cannot hold out any prospect of improvement from any direction; the forthcoming holidays will also doubtless have the effect of restricting business.

The coal situation is unchanged, and is likely to remain so, until better railroad transportation can be afforded to shippers, who, under present conditions are afraid to make commitments, owing to their inability to guarantee specific deliveries.

Inquiry for sail tonnage continues very limited in all directions and rates show very little change but are still favoring shippers. Long voyage business is largely controlled by the rates which steamers on the berth are readily accepting.

Grain to Liverpool is quoted at 2 cents; London 2 1/2 cents, and to Glasgow at 3 cents; Bristol or Hull at 4 1/2 cents.

THE ADVERTISING HABIT.

The man in the front office has just called out, "Why don't you write an editorial on 'The Advertising Habit, As a Good One?'" The advertising habit has been written about a good deal before now, especially by men in the business of soliciting advertising. It does not appeal to the editorial instinct with the same directness and impressive force that surround it in the eager mind of the business manager. There are, however, some things about advertising that even "a ornery editor feller" can understand "sorter dim like." For instance, it is pretty well understood that distinguished business successes and advertising have generally been found hand in hand wherever advanced civilization has been. To bring the question close to home, point to a machinery or supply house of exceptional prominence and conspicuous material success and it will be found to have been a liberal advertiser. To advertise these days means more than a merely standing invitation to the trade to come and buy; it stands as a sign to all the world that the advertiser is doing business in a spirit of generous, broad-gauge enterprise, signifying a sort of hospitality as effective commercially as the same spirit is socially gracious. It proclaims to the world, "here we are, come and see us and be welcome." To be first bidden and then welcomed in this connection is the natural order and a formula not exclusively a matter of mere conventionalism. The buyer of a commodity is as susceptible to the amenities and enterprising tokens of business cordiality as the society stickler is to the conventionalities called etiquette; more so, in fact, if he believes such amenities to be reasonably sincere and the proof of

that lies in the prior disposition to incur the expense of advertising it. There is a spirit of reciprocity subsisting between the advertiser and the press at once mutually helpful to both and incidentally the general public also. The radiation of all thrift knows no bounds because the transaction operating to help one helps to help others and so it goes throughout the limitless fabric of the world's exchanges. A dollar is not limited by time or the times it may discharge a hundred cents of indebtedness. The spirit that inspires, that maintains and that betokens the genius of "the advertising habit" is appropriately a holiday spirit.

In times of depression advertising begets trade; in times of thrift it has begotten trade; at all times it is a good and an appreciative sign of breadth and enterprise the business world is never slow to recognize nor reluctant to reciprocate.

According to the man in the front office, "Now is the time to subscribe and to advertise."

P. S. Arguing negatively, if the advertiser is patronized for what he is known to be, the non-advertiser is passed by for what he is not known to be.

THE FUTURE OF LIQUID FUEL.

ITS ADAPTION IN SHIPYARDS.—WHAT THE CHAIRMAN OF HARLAND AND WOLFF THINKS.

A good deal has been written about liquid fuel, wise and otherwise, but there is evidently something in it, says to-day's Syren and Shipping, when it has attracted the attention of such practical people as the great shipbuilders of the Lagan—Messrs. Harland & Wolff—whose distinguished head (the Right Hon. W. J. Pirrie, P. C., D. L.) recently took a couple of days' "leisure" out of his busy life in order to look closely into the matter. We hear, on the very best authority, that he has in view both the possible economical advantages by the adoption of liquid fuel in his own splendidly equipped works, and also ultimately, if found thoroughly satisfactory, its application to such gigantic monsters as the Celtic, the turning out of which, year by year, seems to be the reason of Mr. Pirrie's existence. He is thus, as usual, showing his anxiety to serve the best interests of his firm's clients by keeping well up to date—indeed, if possible, ahead of the times—and it would be well for British trade and commerce if the same alertness, open-mindedness and progressive adaptability characterized more of our great captains of industry. Certainly the introduction of liquid fuel in our principal steamship lines, in the Atlantic trade alone, would be nothing short of a revolution.

NOTES.

ENGINEER IN CHIEF, Rear Admiral Melville, U. S. N., who a few months ago expressed grave doubts as to the practical value of the submarine boat, contributes an article to the December number of the North American Review, entitled, "The Engineer and the Problem of Aerial Navigation," in which he cautions the public against the opinion that any flying machine can be constructed that will prove of commercial or military importance.

A NEW ingenious contrivance for consuming smoke is being utilized in Berlin. When applied to a furnace it saves coal and consumes all the smoke. It has already been applied to several large engineering works in Germany, with complete success. The German Naval Department has been submitting the device to severe tests upon a torpedo boat, and the results have been so satisfactory that it is proposed to adopt the system throughout the service.

A HANDSOME catalogue has been published by the De Laval Steam Turbine Co., 74 Cortlandt street, New York, whose new works at Trenton, N. J., are about finished. The pamphlet gives a description of the mechanism of the company's turbines, with theory, speed diagrams, reports of tests, etc. These turbines are applied in many different combinations, such as with dynamos, blowers, pumps, rotary fire engines, locomotive headlight equipments and train lighting equipments; in marine generating sets, launches, etc. The catalogue is 6x9 inches, standard size.

THE excellent results obtained from the use of bronze plating for the hulls of the recent cup defenders have led to the adoption of the same material for the hull plates of the new racing sloop to be built by Lawley & Son, of Boston, for Mr. H. F. Lippitt, N. Y. Y. C., and another racer of the same class, for which the Townsend & Downey Ship Building Co., of Shooter's Island, N. Y., have received the contract from Mr. George Mallory Pynchon, N. Y. Y. C. The metal used in both cases will be the celebrated Tobin bronze, manufactured by the Ansonia Brass and Copper Co., of 99 John street, New York.

THE Ajax Metal Co., of Philadelphia, submits the following data concerning a test of Ajax plastic bronze, made in the rolling mill of Hughes & Patterson, Philadelphia: "Test made on hot bar mill, placing Ajax plastic bronze on one end, and phosphor bronze brass on opposite end: Nov. 15, 1900, brasses placed in position measured 7/8 inch in thickness. Feb. 27, 1901, brasses taken out, phosphor bronze then measured 3/8 inch, and plastic bronze 5/8 inch. Phosphor bronze brass, being worn down to useful limit, was discarded. Feb. 27, 1901, new phosphor bronze brass placed, original plastic bronze bearing being used. April 29, 1901, again taken out. Second phosphor bronze brass worn down to useful limit, 3/8 inch, while plastic bronze still measured 7-16 inch, thus showing a saving of over 100 per cent. in favor of Ajax plastic bronze.

CORRESPONDENCE.

✒—We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

UNION AND NON-UNION LABOR.

CLEVELAND, O., Dec. 23, 1901.

To the Editor of The Marine Record:

In the issue of the RECORD for December 19, there appeared under the Buffalo heading an article about one engineer calling another "scab" through a megaphone when their steamers were passing.

Your correspondent evidently takes offense at the use of the word used in addressing the man who violated his agreements made by and to his fellow workmen.

The word used is, in my opinion, hardly strong enough for men of this class, and certainly is not powerful enough to penetrate the brassy nerve of one who can even show his face among men after having acted as this man must have done, to have earned his "opprobrious epithet."

Some of these fellows have actually the night before violating their agreements with their fellow workers, stood on chairs, so as to be better seen and heard, and have vowed their faith and confidence in their order and called on the others to stand firm and never betray themselves into the hands of the enemy. They, after expressing sentiments of this kind, have gone straight to work for the enemy and have thus betrayed every principle of humanity and brotherhood.

If a man is false to one agreement he will be false to another if he thinks it will pay to do so. His employers know this and are always on the watch for some new vagary of a man of this kind; in fact he is not trusted even by the people on whom he fawns.

All non-union men are not designated "scab"; only those who have in an atrocious manner betrayed the confidence reposed in them.

There are some non-union men existing among all classes of labor who by their manly and upright stand for their principle have won the respect and admiration even of those opposed to them.

In conclusion ye dignified gentlemen of the thin-skinned order, and who object to the use of "opprobrious epithets," permit me to Bare my head and bow before you, individually and collectively I salaam to you all; as not of this wicked world but of the other.

Trusting you may publish this in your very valuable paper so that both sides may be heard from,

PELOPS.

RULES OF THE ROAD.

DETROIT, Dec. 23, 1901.

To the Editor of The Marine Record:

Kindly let me know through the columns of the RECORD if the pilot of a steamer which was being overtaken was to check down, to give the overtaking steamer a chance to get by quickly and before coming to a bad place would he be held at fault. The law distinctly says: "The overtaking vessel shall maintain her course and speed."

It is a common practice on the lakes for the overtaken vessel to check down in the rivers when another is passing her in the same direction, especially in shallow water. This is not done out of courtesy, but to get the other boat out of the way quickly and also to avoid any trouble which might occur by meeting other vessels or through the effect of suction on both vessels which effect would be greater if both were going at full speed than if the overtaken were checked down.

A steamer passing a tow going in the same direction in narrow waters, frequently pulls the tow after her and causes the tow line to slack; if the towing steamer were not to check when the strain was again coming on the tow line, there would most undoubtedly be trouble as the tow line would almost be sure to part.

If the towing steamer were checked down to avoid this would he be held at fault if trouble occurred in any other way, or if the tow line did part, and the tow go on the bank.

It is of course understood that the proper signals have been given and answered.

I ask these questions as many arguments have arisen among marine men as to their liability in these respects.

It is well known that the force of suction is at its maximum and operative for a considerable distance when the water is shallow or confined.

ENQUIRER.

TO PREVENT BARS FORMING.

CLEVELAND, O., Dec. 21.

To the Editor of The Marine Record:

An old resident of Fairport Harbor who has made a study of the conditions that prevail on the Grand river during the winter and spring, says:

I would be willing to enter into a contract for a very small sum of money, (and guarantee favorable results), with the government, or private interests, to keep the bar from forming at the mouth of the piers during the winter and spring, and my plan would undoubtedly prevent the destructive floods which prevail during the spring freshets.

This plan is as follows:

"When the ice reaches a thickness of eight inches or less, he put men at work sawing the ice from the center of the channel for a width of 30 or 40 feet, and extending down

from the bridge to a point some little distance outside of the piers.

The ice sawed from the center of the channel would be shoved down on each side of the cut and form, as it were, an embankment on each side of it, which in the course of a number of cuttings during the winter would reach a thickness of several feet. This would, he says, serve to confine the current to the center of the channel, and direct it out to the deep water of the lake. The current being confined between these banks of ice would assume a greater velocity than if left to the wider channel between the piers, and would, together with the ice which would rush through it in the spring, effectually cut out any bar that would be in the process of formation, and would deepen the channel already in existence, and would also prevent the current from being dispersed on reaching the mouth of the piers, and depositing its load of silt and debris in their immediate vicinity, but would carry it on until deep water was reached.

The river above would, when it broke up in the spring, have a clear channel through which to flow, and would be in no danger of jamming at the mouth and causing a back up of the water, which in past years has done extensive damage to the railroad and other interests situated on the banks of the Grand River.

It would also, he claims, minimize the danger to the vessels moored at the various docks in this vicinity.

Since my conversation with the gentleman whose scheme I have just exploited, I have been told that this plan has been for a number of years in successful operation on a number of rivers flowing into the Baltic Sea.

VERITAS.

WHERE IS LONG POINT?

BUFFALO, Dec. 22, 1901.

To the Editor of The Marine Record:

Your valuable and instructive paper came duly to hand and was glad to receive it, not only on account of its fair and impartial handling of the current news, but also on account of the remarkable enterprise displayed by your Buffalo correspondent, whom I had the pleasure of meeting a few days ago.

The RECORD has always been vigilant, alert, and on the qui vive for news, but in its account of the position of the steamer Mark Hopkins it has surpassed itself, and has "scooped" all other papers.

Your readers for the first time learn that Long Point on the Canadian shore of Lake Erie has altered its old-time position as follows:

"The steamer Mark Hopkins lies six miles west of Long Point on the Canadian side, about twenty-five miles from Buffalo, in the most treacherous sands that the lakes afford. It is confessed that never did but one vessel get off that shore when well landed there. That was the F. & P. M. No. 2, which went on there a number of years ago. At the same time the steamer Newburg was lost there, and so quickly and completely was she swallowed up by the sands that most of her cargo went out of sight with her. The sands shift so easily and fill up after a dredge so fast that it is found to be impossible to open a channel from deep water to the Hopkins, for the sand flows in like water. The shore line is said to change as much as 300 feet in a single day of rough weather."

All other papers have failed to record this interesting and important geographical fact (?).

Knowing you so well I know you will not take umbrage at my suggestion—your readers in general and myself in particular would be pleased to learn when and under what circumstances this cataclysm of nature occurred.

Was it due to an earthquake, a landslide, the quickly shifting sands in that part, or was it due to the force of the "Mark Hopkins" hitting the beach that Long Point so suddenly and without warning moved over forty miles to the eastward?

ARGO.

DETROIT RIVER MAIL DELIVERY.

DETROIT, WAYNE CO., MICH., Dec. 21, 1901.

To the Editor of The Marine Record:

I desire to inform you that the marine service on the Detroit River closed Wednesday night, the 18th inst. When this service is closed in the fall there are always quite a few pieces of mail undelivered. I write to ask if you will not in some conspicuous place in the next issue of your paper, call the attention of vessel men who may be expecting mail to the fact that, if they will drop a note to the Postmaster of Detroit, giving their addresses, all such mail on hand will be immediately forwarded to them. This will be a great accommodation to the vessel owners, inasmuch as many of them have mail arriving after the last passage of their boats.

I take this opportunity to inform you that, while we haven't the report out and cannot tell exactly how many pieces of mail were handled, it will not vary one way or the other very much from 400,000 pieces handled during the season. Notwithstanding the season this year was 21 days shorter than last year, this is an increase of 16,000 pieces. There were 505 money orders issued, aggregating \$10,550.97, and 56 letters registered by this service. The number of vessel passages was 20,529. The number of passages, I observe, is decreasing somewhat, but this is due to the fact that very large boats are being built, displacing the smaller ones, so that, while there are fewer passages up and down the river, the tonnage is increasing.

Not a single complaint has been received concerning the marine service this year, which, I think, speaks exceedingly well for the force in charge of that service.

F. B. DICKERSON, Postmaster.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Damages.—Breach of Towage Contract.—Evidence.—A claim for damages against a tug under contract to perform towing services for a dredging fleet, because of her occasional absence or unreadiness, can only be sustained by proof of actual damage resulting. In the absence of such proof, evidence of the earning capacity of the dredging plant per day, when fully employed, affords no basis for charging the tug with damages computed at the same rate for time lost by her. *Ball et al., vs. Randerson*, 111 Fed. Rep. (U. S.) 212.

Admiralty.—Pleading.—Amendment.—Where respondents in a suit in admiralty pleaded a special defense, which they permitted to stand in the same form during the litigation of the case in the District Court, the Circuit Court of Appeals (where new pleadings were filed), and the Supreme Court, by each of which it was considered and adjudged sufficient, they will not be given leave to amend the answer so as to present such defense in a new form after the cause has been remanded for a re-trial upon another issue. *Burrill et al., vs. Crossman et al.*, 111 Fed. Rep. (U. S.) 192.

Towage.—Construction of Contract.—Damages for Breach.—Libellant agreed to perform towing services in connection with dredging operations at a stipulated price per day. There was no agreement that the tug should work for any particular length of time or while any particular amount of dredging was being done. Held, that there was no implied agreement that the tug should always be in readiness, or always able to work, which would render her liable for damages resulting to respondent because of her failure to be in attendance at all times. *Ball et al., vs. Randerson*, 111 Fed. Rep. (U. S.) 212.

Seamen.—Grounds for Discharge.—Excessive Use of Liquor.—It is within the legal authority of the master of a ship to prohibit absolutely the use of intoxicating liquors by his subordinate officers and the members of the crew, and a mate who, after the master had remonstrated with him for his excessive use of liquor, and had forbidden the steward to furnish him any, obtained it through the connivance of a passenger, and, owing to intoxication, failed to obey an order with the required promptness, gave legal cause for his discharge before the expiration of his term of service. *The Bertha*, 111 Fed. Rep. (U. S.) 550.

Too Close Approach.—Suction.—A large steamer, 482 feet long, and drawing twenty-nine feet, and going at a speed of twelve and one-half knots an hour at the time she overtakes another vessel of nearly the same size and draft, is not justified in passing at a distance of not more than 150 feet at a place where the water is little deeper than their keels; and a collision occurring under such circumstances by the swinging of the bow of the overtaken vessel against the quarter of the one passing may reasonably be attributed to the effect of suction, in the absence of other apparent cause. *The Mesaba*, 111 Fed. Rep. (U. S.) 215.

Seaman.—Authority of Master Over.—The master of a vessel is strictly accountable to those under him, both criminally and civilly, for wanton injury inflicted upon them, or oppressive and unreasonable treatment; but he is necessarily vested with great authority, which it is his right and duty to exercise in the maintenance of discipline, and will be protected in the exercise of such authority, even to the extent of inflicting corporal punishment on a subordinate, where the circumstances are such as to justify it, and he acts from proper motives and in a reasonable manner. *Dorrell vs. Schwerman*, 111 Fed. Rep. (U. S.) 209.

Operating Gasoline Launch Without Certificate of Inspection.—Rev. St., Section 4426, requiring the inspection of steam vessels, etc., as amended by Act, Jan. 18, 1897, (29 Stat. 489), making it applicable to vessels propelled by gas, fluid or electricity, when used for carrying freight or passengers for hire, contains no provisions prohibiting an owner from running his vessel before such inspection has been made; and an indictment for navigating a gasoline launch for hire without inspection charges no offense, at least where it does not aver that any regulation prohibiting such act in respect to that class of vessels has been adopted pursuant to the authority given by statute. *United States vs. Nash, et al.*, 111 Fed. Rep. (U. S.) 525.

Collision.—Overtaking Steam Vessels.—Unanswered Signal.—Under article 18, rule 8, of the inland navigation rules, when an overtaking steam vessel signals her desire to pass it is the duty of the vessel ahead to answer the signal at once, and the overtaking vessel is prohibited from attempting to pass, where it is not clearly safe and the co-operation of the vessel ahead is required, unless she receives an assenting answer to her signal. Where both vessels violate these requirements, the overtaking vessel mistaking the silence of the other for acquiescence in her signal, and in attempting to pass at a bend in a channel a collision occurs, both are in fault; and neither is relieved from liability by the fact that her violation of the rule was not the sole cause of collision, and that the passage would have been safely made but for the improper navigation of the other. *The Mesaba*, 111 Fed. Rep. (U. S.) 215.



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ESTABLISHED 1878.

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CLEVELAND, O., DECEMBER 26, 1901.

It is understood that Harland & Wolff, of Belfast, Ireland, have been invited to tender for three steamers of the length of 825 feet for the proposed or intended fast Canadian mail service across the Atlantic. As yet the report lacks confirmation and the extreme dimensions given would seem to imply a great big error in this particular at least.

RELATIVE to the communication signed "Argo," in the current issue of the RECORD regarding the location of Long Point, Lake Erie, we may say that the promontory still holds its geographical location to the best of our knowledge. Our critic picks up a typographical error in the substitution of a figure which he might possibly have recognized if not too prone to rush into print.

APROPOS of the great detention experienced this season on iron ore cargoes it should be strictly understood that charter-parties provide, or ought to, that when a vessel is kept beyond the agreed period for loading or discharging the shipper or receiver shall pay damages to the shipowner in the shape of demurrage to recoup him for his loss under the heads of crew's wages, cost of provisions, detention in port, and capital standing idle.

WE are pleased to acknowledge a seventy-page issue of the 'Frisco Call, sent by Capt. J. M. Fields, 859 Howard Street, a compass adjuster who accomplished excellent work on the lakes last season, and who is now located in San Francisco at the above address. The Call is as enterprising as always and the annual issue is simply magnificent, a word which we think expresses all that a metropolitan daily should or could be. Success to the Call.

MR. A. B. WOLVIN, of Duluth, sees the reason and value of civil service in the ordinary business affairs and will apply to the vessel interests under his management. A set of rules regulating promotions and the participation in the profits of the business have been made public. This step is a demonstration of the wisdom of these interests in selecting Mr. Wolvin as manager and also of the fact that self interest is possibly the greatest and most efficacious remedy in providing against labor troubles.

A DEPARTMENT OF COMMERCE.

There is every argument in favor of Congress passing a bill this season creating a Cabinet Officer as the head of a Department of Commerce and Transportation, especially with a view to the rehabilitation of our mercantile marine.

This departure has been frequently advocated in the columns of the RECORD and we have never heard one word in derogation of our contention, on the other hand many other influential sources endorse the views so frequently ventilated in our columns.

We now find that the British are dropping into the same line of advocacy if we consider that the Liverpool Journal of Commerce voices a scintilla of the marine thought or sentiment on that side of the Atlantic. Our contemporary says:

"Apparently the demand for the appointment of a Minister, who can devote all his time and energies to the interests of shipping and navigation, notwithstanding the enormous stake of the country in that direction, does not appeal to the Government of this country. It appears to be sufficient that the Board of Trade exists, and that under its auspices there is a Marine Department. That, however, is no proof in support of the contention that already maritime interests are adequately represented. A Minister of Marine could in many ways assist the merchant service; he would be constantly in touch with the men and matters of the mercantile marine, and in matters of navigation he could move along progressive lines, as is done in Canada by a Minister of Marine. The relief to the President of the Board of Trade could not but be a blessing, as it would leave that Minister free to devote his time to commerce. The suggested department would, of course, control the lighting and buoying of the coasts and channels, and thus put an end to the three institutions whose function it now is to do this important duty. Although the way seems clear for a great improvement, it is questionable whether any organized attempt will be made to bring about the desired change; for we are a conservative nation, and there is the fear that shipowners would prefer to bear with the evils they know than invite a new form of maritime control."

SUBMARINE SIGNALLING.

A system of submarine signalling is soon to be installed in Boston Harbor. The system will comprise two submerged bells, one on either side of the harbor entrance. These bells are struck simultaneously through electric cable connections from the shore. These bells sound different numbers so they can be easily identified.

This system was invented by Prof. Gray, who also invented the receiver that tells just the direction from which the sound proceeds. Another device renders it unnecessary to wait at the receiver for the sounding of the bell, for whenever such signal is sounded a gong automatically rings in the pilot house by sympathetic vibration.

A signal through air, whether by whistle; fog horn or gun, may be heard from 10 to 40 miles away under one condition of atmosphere, and less than 100 yards away under another, depending upon the density, temperature and motions of the surrounding belts or areas of air. These freaks and tricks of air have been brought out frequently in enquiries concerning the loss of vessels, or accidents at sea.

As the experiments at Boston show that sounds of a submerged bell are audible up to a distance of 12 miles, with a probability of this range being increased, it would appear that the new system on the whole, be cheaper than the present unreliable air signalling system, and the government might make a test of it experimentally in the channel between Point Iroquois and the Sault canal, and if successful there could afterwards be installed at such places as Point Pelee, Lake Erie, White Fish, Lake Superior and other places on the lakes where we have to depend entirely during thick weather on the unreliable air method of which we hear so many complaints every season.

The system, in connection with a signal code, offers means for communicating with lightships to and from the shore, also between ship and ship at sea and between ships and the shore. The Dominion Government are about to adopt this system on the St. Lawrence between Montreal and Quebec.

This system appears to be as safe and reliable as any of the new devices for the better protection of life and property at sea, and it is time for the lake vessel men,

with their crowded and narrow channels and ever increasing traffic, to insist upon having a better system than is now in vogue. The atmosphere here is most frequently either, smoky, foggy, or a snow storm prevails, especially at those dangerous entrances to the several points which connect the Great Lakes.

LEWIS NIXON, the shipbuilder, said that the industrial and commercial development of the United States in the past twenty years has been because the employer in this country works with the men who work for him. All are workers and all have rights, and we are about to establish a kind of industrial clearing house where grievances on either side can be discussed and weighed, and with the benefit of informal public opinion justice will prevail. One of the troubles in labor organizations here is that abuses which have grown up in foreign countries under other conditions have been brought in. The American workman, while courageous enough to stand up for his rights, is also courageous and intelligent enough to know and acknowledge when he is wrong.

Work on the two mammoth steamships for the Great Northern Steamship Co. is proceeding very rapidly and it is expected that both vessels will be launched during the early summer. It is stated, however, that the construction of the proposed two larger steamships for the same company has been postponed, and work on these vessels will not commence January 1st as was anticipated.

A STATISTICAL report of the lake traffic through the "Soo" canals for 1901 has been made public. The report shows a total of 28,403,065 net tons of freight passing through the canals, of which less than 3,000,000 is credited to the Canadian lock. This is an excess of 2,759,992 tons of freight shown over last season.

LAUNCH OF THE MINNEWASKA.

The large steel cargo steamer Minnewaska, built to the order of the American Navigation Co., C. E. and W. F. Peck, New York, was successfully launched from the Cleveland yards of the American Ship Building Co. on Saturday last, James H. Hoyt, Esq., president of the company representing her owners. The general hull dimensions of the Minnewaska are: Length over all, 443½ feet; keel, 430 feet; beam, 44 feet; depth, 34½ feet. She will have triple expansion engines with cylinders 27x42x73, with a 48-inch stroke. Steam will be furnished by Scotch type boilers with an estimated steam pressure of 170 pounds. The cost of the craft complete is about \$400,000.

The Minnewaska, as also her sister ship, recently launched, will be drawn apart, the ends bulkheaded, and be sent to the coast on the early opening of navigation. After passing through the St. Lawrence system of canals the sections will again be riveted together and they will be placed in the coast and ocean trade.

Should these sister ships prove as successful as anticipated there is every probability that a large fleet will be built on the lakes for salt water service. In any case they have been built under special survey and will class A1 in Lloyds register of classification.

A RECORD IN BREAKWATER BUILDING.

The new harbor of refuge at the entrance to Delaware Bay has been finished at a cost of \$2,150,000. This work has been termed by the Chief of the Corps of Engineers, General Gillespie, U. S. A., "a monument to the efficacy and skill" of Colonel Raymond, Corps of Engineers, U. S. A. Not only has the cost of the construction per ton been remarkably low, but in addition, the work has been completed in record breaking time. A comparison of the pace set in this work with that of the construction of the old breakwater indicates the revolution in methods. The old structure, about a mile long, and containing 1,231,587 tons of stone, was seventy years in process of construction; whereas but four years have been occupied in the new breakwater, which is one and one half miles long, and contains 1,464,410 tons of stone. It is probable that never before in breakwater construction has so great an amount of material been deposited in an equal space of time. The Chief Engineer, Corps of Engineers, U. S. A., is one of the most responsible officers of the government and his entire staff is probably the most efficient in the service of the country.

MARINE LITIGATION.

A Chicago special says: "The right of a ship to sail out in the open sea when storm signals are flying is to be tested in the United States Circuit Court here at an early date. The vessel which attains the honor of making the test of this novel question is the schooner Emily B. Maxwell, and the Haywood Rattan Co. is the concern forcing the issue.

"On September 11, 1900, the Maxwell sailed out of Charlevoix, Mich., for Chicago with a cargo of lumber. Storm signals were flying, but when the Maxwell left the weather was fine and pleasant. Five hours later the ship was struck by a severe storm, and her deckload, owned by the Heywood Co., was swept overboard. It was valued at \$1,000, for which amount suit has been brought. In trying this case Judge Kohlsaat will be called upon to pronounce on the reliability of the storm warnings sent out by the Weather Bureau. He will have a nice question to determine the duties of a captain who is in port during a pleasant day when storm signals are flying. Lake captains have never found out whether it was their duty to go and run the risk of facing a bad storm, or stay in port and run another risk of losing valuable time. In the Maxwell case there are some side issues of barometer, etc., but the main point is the reliability of weather signals.

There is another case in the Admiralty Court soon to be tried which will be of much importance, not only among marine men, but in the business world generally, as it concerns contracts over long distance telephones. The general adoption of long distance telephones for chartering purposes on the lakes will cause vesselmen to watch the case with deep interest.

Last spring the steamer Pewaukee was chartered by Chamberlain & Co., of Chicago, from Leatham & Smith, of Sturgeon Bay, Wis., all the talk being over the long distance telephone. Differences arose and Leatham & Smith refused to recognize the contract on the ground that it had not been consummated. The Chicago firm sues for \$5,000 for breach of contract.

Still another case of interest will be that of Sorren Termanson, the owner of a scow at Manitowoc, against the schooner Jesse L. Boyce for \$500 damages. The Boyce was lying at a dock at Manitowoc last fall, and Captain Ole Christenson wanted to change her position. The scow was in the way, and Capt. Christenson moved it. In the night a storm came up and several holes were knocked in the scow's side. Charles E. Kremer, the Admiralty lawyer, representing the Boyce, held that the captain himself and not the schooner was liable if damages resulted. Vessels could not be responsible for the whims of captains who started moving other people's property. Some interesting points will also come out of this suit.

The case of the steamer Conestoga against the city of Chicago for damages amounting to \$67,034, on account of that steamer being sunk by collision with a water works crib on November 16, 1899, will be tried early in January.

Two cases of vessel owners against the Drainage Board for losses suffered in the south branch of the Chicago river will go far toward settling the reliability of the Drainage Board for damages on account of the current and obstructions to navigation.

"The United States Court in Chicago have had many times a larger number of cases in Admiralty," a marine lawyer said, "but seldom has it come that one winter has seen so many important questions bunched as now. In the Conestoga case there is not a city around the lakes not directly interested. for the rights of municipalities to maintain cribs in navigable waters is to some extent at stake. In the drainage canal cases the issues are practically new, but the findings will be of vast import to the marine interests as well as the commerce of the city. The storm signal case is of national import. A good share of the suits will probably go to the Court of Appeals before they are finished."

THE administration of the Italian Navy, in consideration of the successful results obtained, has decided to extend the use of wireless telegraphy on the Marconi system to all the Italian semaphores, so as to put them in a position to communicate with vessels out at sea. It is also hoped that several semaphores will be enabled eventually to communicate with one another. The Italian War Office will now also adopt wireless telegraphy. Several trials have already been made with very satisfactory results.

EXTRA DUTIES FOR COL. LYDECKER.

Colonel G. J. Lydecker, United States Engineer in charge of the work in the Detroit district, has been advised to the effect that within a short time he will have additional and vastly important work added to the district now under his supervision. While information received is very meagre, it is to the effect that he is to assume the duties of Lieutenant Colonel T. H. Handbury, now in charge of the government work in the central district, with headquarters at Cincinnati.

Whether these additional duties will necessitate his removal from Detroit Col. Lydecker does not yet know, and he will receive additional instructions from Washington.

Lieutenant Colonel Handbury was formerly lighthouse engineer of the Detroit district, and but a short time ago was transferred to the central district, which comprises the work at Pittsburg, Wheeling, Louisville, and all along the Ohio river. It has been known that he had been seeking an assignment to San Francisco, and the information now at hand is to the effect that he will now be transferred to the Pacific coast and that as far as is now known Colonel Lydecker will take charge, at least temporarily, of the Detroit and Cincinnati districts.

Colonel Lydecker has been in charge of the Detroit district for the past eight years, and is one of the most competent engineers in the service, having had charge of most of the important improvements in this district, including the Lime Kiln Crossing work, the St. Mary's river improvements, and the various cuts and channels which have been installed by the government within the past eight or ten years.

He will be missed in Detroit if the latest order of the government necessitates his removal, but it is thought that he will still remain in this city and still have supervision of the work in the district which will be left by the transfer of Lieutenant Colonel Handbury. It is not necessary in order to supervise the work of a district, that the United States engineer take up his residence in that district.

CANADA'S CUP RACES.

The international yacht race for the Canada's Cup, which was to have been sailed between vessels representing the Royal Canadian Yacht Club, of Toronto, and the Rochester Yacht Club off Toronto Harbor, in 1902, has been postponed until 1903, since it is not likely that the Yacht Racing Union of the Great Lakes will decide in time to permit the clubs to build what class of yachts shall be permitted to enter for competition for this cup. The following is the correspondence between the Royal Canadian Yacht Club and the Rochester Yacht Club, as challenger:

TORONTO, Dec. 18, 1901.

The Secretary, Rochester Yacht Club, Rochester, N. Y.:

Dear Sir:—With reference to your letter of September 12th ult., accepting a challenge of the Rochester Yacht Club for a race to be sailed next summer for the Canada's Cup, I am directed by the sailing committee to respectfully request that the Rochester Yacht Club agree to postpone this race until the year 1903; the reason for the request being that no decision has been arrived at by the Yacht Racing Union of the Great Lakes in the matter of sailing rules, and it may be inferred by the indications thus far shown that the rules will not be agreed on in time to permit of the building of new boats. I am also directed to request the favor of an early reply. Yours faithfully,

F. J. RICARDE-SEEVER,
Honorary Secretary.

ROCHESTER, N. Y., Dec. 21, 1901.

Mr. F. J. Ricarde-Seever, Honorary Secretary, Royal Canadian Yacht Club, Toronto, Canada:

Dear Sir:—I have the honor to acknowledge receipt of your letter of the 18th inst., requesting the postponement of the Canada Cup race until the year 1903. The matter was taken up at a meeting of the Rochester Yacht Club, held on the 19th day of this month, and a resolution was passed granting your request to postpone this race for the reasons mentioned in your letter.

Very respectfully yours,
GEORGE P. CULP,
Corresponding Secretary.

THE transit revenue of the Suez Canal Co. in the first ten months of this year amounted to £3,345,994, as compared with £2,981,351 in the corresponding period of 1900, and £3,099,767 in the corresponding period of 1899. The company will pay on January 1 an interim dividend of £2 2s per ordinary share for 1901. The dividend shows an increase of 4s. per share as compared with the corresponding distribution made on January 1, 1901.

A REVISION OF GRAIN CHARGES.

It is now said that the recent agitation of the New York grain exporters against the railroad pool forced the concession of the abolition of the arbitrary transfer tax. This tax, it is openly admitted, had been in existence for the preservation of the floating elevator companies which were closely allied to the railroads. This lighterage charges of New York harbor have long been one of the intricate and puzzling affairs of American commerce. A series of rates and regulations, that aimed first at private elevators and second at the canal shippers, were exacted of the shippers until the natural revolt came, spreading through the last two or three years. By this New York lost a portion of its export trade. New York business men and exporters rebelled against the result, just as the shippers had revolted from the excess charges in the harbors, and the joint agitation brought about the revision of the tariffs, which it is believed is coming. The abolition of the arbitrary tax on loading the grain from the cars direct into ships is said to be but the forerunner of other changes later on.

TO CLOSE THE STRAITS OF BELLE ISLE.

Writing from St. Johns, Nfld., P. T. McGrath says: One of the most extraordinary engineering projects yet proposed to the scientific world is that for closing the Belle Isle Strait, between Newfoundland and Labrador, by building a breakwater across it at the narrowest part, where the channel is but ten miles wide and 180 feet deep. The benefits to be derived from such a scheme are that the shores of Quebec, Anticosti, Cape Breton, Nova Scotia and Prince Edward Island would become veritable gardens in which semi-tropical fruits and vegetables would flourish, and that the portion of Labrador west of the causeway would have a climate as salubrious as that of France, being in about the same latitude. The theory underlying this remarkable proposition has the weight of practical experience largely on its side.

The argument is that Belle Isle Strait is the channel or doorway from the north, by which icebergs, flocs and the frigid waters from Greenland and the Arctic Ocean find their way into the Gulf of St. Lawrence, chilling its area, causing fogs, cold, damp and late springs, and generally imparting to the region the semi-Arctic aspect. As conditions now are, with this seaway open, the ice begins to drift in towards the end of November, and the navigation of the Gulf is then impossible until the following May.

If this channel were closed, it is maintained by the promoters of the new scheme, little ice would be formed in the Gulf during the winter, for then the frozen plains and chilly waters from the north would be forced out into the Atlantic Ocean and along the east coast of Newfoundland. The Gulf of St. Lawrence has an area larger than the state of Illinois, and such a body of ice pours into it that it forms huge crystal prairies, thirty feet thick, and, with a superficial area of many miles, driven this way and that by the changing winds.

Shipping.—Offenses Against Navigation Laws.—Operating Gasoline Launch Without Licensed Engineer.—Under the provisions of Rev. St., Section 4426, that no ferryboat, canalboat, yacht or other small craft of like character, propelled by steam, shall be navigated without a licensed engineer and a licensed pilot, as amended by Act, Jan. 18, 1897, (29 Stat. 489), by extending its provisions to all vessels of above fifteen tons burden, carrying freight or passengers for hire, propelled by gas, fluid, naphtha, or electric motors, and Id., Section 4500, which provides that "the penalty for the violation of any provision of this title, not otherwise specially provided for, shall be a fine of \$500.00 recovered one-half for the use of the informer," one who navigates a gasoline launch of over fifteen tons burden, in the carrying of freight for hire, without a licensed engineer, is guilty of a crime, and may be indicted and prosecuted therefor, notwithstanding the provisions of sections 4496 and 4499, which authorize a proceeding in rem against the vessel by the collector of inspectors of customs for the recovery of a penalty of \$500.00 for a violation of any of the provisions of such title. United States vs. Nash et. al., 111 Fed. Rep. (U. S.) 525.

THE metric system is to-day compulsory in twenty countries, representing more than 300,000,000 inhabitants: Germany, Austria-Hungary, Belgium, Spain, France, Greece, Italy, Netherlands, Portugal, Roumania, Servia, Norway, Sweden, Switzerland, Argentine Republic, Brazil, Chili, Mexico, Peru and Venezuela.



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TREASURY DECISIONS.

DISCHARGE OF FREIGHT LIENS.

Under act of May 21, 1896 (29 U. S. Stat. L., ch. 217, p. 129), amendatory of section 2981, Revised Statutes, and act of June 10, 1880, it is for chief officers of the customs primarily to decide whether a freight lien is satisfactorily secured.

Where there is controversy between the consignee and the carrier respecting the validity of the lien, such officers of the customs may deliver imported merchandise, against which a freight lien has been filed, to the consignee upon the deposit with them by the latter of a good and sufficient bond conditioned to pay all freight charges that may ultimately be found to be due or adjudged to be due in any court of competent jurisdiction, after proof has been made before said officers that the same bond was first tendered to the carrier by the consignee and refused by the carrier, and that said bond is adequate to secure the carrier.—Wyman vs. Lancaster et al. (32 Fed. Rep., 720) cited and followed.

If it should be deemed necessary for this security, chief officers of the customs may, in addition, exact a bond of indemnity running to themselves to save them harmless from any personal liability which might otherwise accrue as to the result of any litigation between the consignee and carrier.

Treasury Department, December 13, 1901.

SIR: The Department is in receipt of your letter dated the 2nd instant, transmitting the application, with inclosures, of Messrs. Stetson, Cutler & Redman, consignees, for the delivery to them of 168,000 feet of lumber and 22,500 laths imported into your port per the brigantine Atrato from Sheet Harbor, Nova Scotia, and entered for consumption November 9, 1901, under consumption entry 193,468.

It appears that at the time of entry of the merchandise permission was given to discharge the vessel at New Rochelle, and the permit was accordingly sent to that place; that meanwhile a notice, executed in due form, of a lien for freight charges on the cargo, amounting to \$558, was lodged with you by the master, and that, therefore, delivery of the lumber to the consignees was refused, and the same was placed in the bonded yard at Erie Basin under general order on the 12th ultimo, the date of receipt of the notice of lien, in accordance with the provisions of the act of May 21, 1896, (29 U. S. Stat. L., ch. 217, p. 129), amendatory of section 2,981, Revised Statutes, as amended by the act of June 10, 1880.

The bill of lading provides for the delivery of the cargo by the vessel "in good order and condition at the port of New York, * * * dangers and accidents of the seas, rivers and navigation of whatever nature and kind excepted, unto Messrs. Stetson, Cutler & Redman, or to their assigns, he or they paying freight."

The consignees, having effected a sale of the lumber at New Rochelle, and relying on the above contract of affreightment and an alleged custom of the port requiring lumber vessels to discharge at berths where they lie on soft mud at low tide, claimed that the cargo should have been unladen at that place in compliance with their directions. The ship's agents contend that, owing to the draft of the vessel and the insufficient depth of water, it was impracticable to unlade at New Rochelle, and the master refused to make the attempt unless the consignees would guarantee that the vessel would remain afloat during all the time consumed in discharging.

Thereupon the consignees of the cargo tendered to the master and owners of the vessel a bond, with the Lawyer's Surety Co., of New York, as surety, conditioned to pay to such master and owners, their attorneys, representatives or assigns, "all freight, (if any) that may be found or adjudged to be due in any court of competent jurisdiction in any suit, action, or proceeding, commenced before January 1, 1908, against the said firm of Stetson, Cutler & Redman," in respect of said cargo, with legal interest thereon. The master and owners, or agents, of the vessel declined to accept said bond and refused to discharge the lien except upon payment of the amount of their claim in cash. Whereupon the importers or consignees made demand upon you for the release of the lumber, coupling with

their demand an offer to deposit said bond with you as sufficient security for the discharge of the lien.

The importers allege that the constant accumulation of storage charges on the merchandise will, in a short time, render the lumber of no profitable use to them.

The question is, therefore, submitted to this Department for decision.

Articles 427, 430, and 432, Customs Regulations of 1899, provide that the chief officer of the customs shall decline to deliver to the importer or consignee any merchandise against which a lien has been filed, until such lien shall have been satisfied; that "proof that the claim under the lien has been paid or secured shall consist of a discharge of the lien in writing, signed by the person claiming such lien and served by the owner of the goods upon the chief officer of the customs," and that customs officers have no authority to adjudicate disputes concerning the validity of any lien, except when the amount of the lien depends upon the quality or weight of the merchandise actually landed.

But in the case of Wyman vs. Lancaster and others, (32 Fed. Rep., 720), where there was a disagreement between the consignee and the carrier as to the amount of the freight charges, the court expressed the opinion that upon tender by the consignee to the carrier of the amount admitted by him (the consignee) to be due, and the refusal of the carrier to accept the amount, "a sufficient bond should be tendered the carrier by the consignee, conditioned to pay all freight that may ultimately be found to be due or adjudged to be due in any court of competent jurisdiction," and if upon such tender the carrier declines to consent to the delivery of the goods, proof of such facts should be made to the collector of customs, and if that officer is satisfied that the bond tendered is adequate to secure the carrier, "he should deliver the goods on deposit with him, for the use of the carrier, of the bond originally tendered to the carrier," and that if, after such steps have been taken, the collector arbitrarily refuses delivery, an action "will lie against the collector to recover the goods."

In conclusion, the court observed that the petition in that case could be amended so as to show what steps had been taken; and "if the court is satisfied, by affidavits, that a good and sufficient bond has been tendered" to secure the freight claimed, and that proof of the fact of such tender had been made before the collector, and that he arbitrarily refused to give up the property, "then the court will enter an order upon the collector directing the delivery of the goods to the consignee." The court further remarked that that "the statute does not intend that the collector's office shall be so administered as to compel a consignee to pay an unjust demand for freight, or be deprived for an indefinite period of the possession of his goods."

As far back as 1882, and prior to said decision, a question rose at the port of Boston, Mass., where a freight lien had been filed and the importers, disputing the claim, had libeled the importing vessel for damages for alleged unseaworthiness. The collector of customs delivered the merchandise upon the execution of a bond conditioned for the payment of the freight which might be found to be due, and the action of the collector was approved by the Department in a letter (4,008 d, unpublished) addressed to that officer under date of October 3, 1882.

The collector of customs of Philadelphia, Pa., in the early part of the year 1890, following the decision of the United States Circuit Court for the eastern district of Missouri in Wyman vs. Lancaster (supra), delivered certain merchandise to the consignees on the deposit with him of a bond to secure the lien which had been filed against the goods, and the Department took the decision that, in view of the court's decision, the matter was one involving the personal responsibility of the collector, and that, therefore, departmental action in the premises did not appear to be necessary (4,019 f, unpublished).

It will be observed that while the act of May 21, 1896, provides that customs officers shall not be liable for losses consequent upon a refusal to deliver merchandise to the consignee against which a freight lien has been filed, that statute is silent as to the exemption of liability of such officers where the goods are delivered without payment or security of the lien. The Department, however, in Treas-

ury decision 14,793, dated March 26, 1894, advanced the opinion that—

The privilege granted by law (sec. 2,981, Rev. Stat. as amended by the act of June 10, 1880) to transporting agents for their convenience in collecting charges for freight does not impose any responsibility upon the Government or its officers.

But it appears from the decision in Wyman vs. Lancaster that, in a case like the one here under consideration, such officer is personally liable to an action for "recovery of the goods" where he refuses to make delivery to the consignees upon the deposit with him of a good and sufficient bond running to the common carrier, conditioned to abide the decision of a court of competent jurisdiction.

Under the statute, it is for the chief officers of the customs, primarily, to decide whether a freight lien is satisfactorily secured, but, in view of the foregoing, it may be stated that the Department perceives no objection, in this and similar cases where the bond has been first been tendered to the carrier and refused, to the release of the cargo upon the deposit with you, for the use of the carrier, of such bond with approved sureties conditioned aforesaid. If you should deem it necessary, for your security, you may, in addition, exact a bond of indemnity running to yourself to save you harmless from any personal liability which might otherwise accrue as the result of any litigation between the consignees and the carrier.

In this connection, your attention is invited to the fact that it is not shown that the Lawyer's Surety Co., of New York, has qualified under the act of August 13, 1894 (28 U. S. Stat. L., ch. 282, p. 279), relating to corporate sureties on bonds which by "the laws of the United States" are "required or permitted to be given with one surety or with two or more sureties," a point which appears to have been overlooked in this case.

Respectfully,
(8469 k.)

H. A. TAYLOR,
Assistant Secretary.

COLLECTOR OF CUSTOMS, New York, N. Y.

Admeasurement of vessels:

Capacity of chain locker in forepeak of lower hold may be deducted from gross tonnage in ascertaining net tonnage, if space is properly marked.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
Washington, D. C., December 16, 1901.

SIR: Referring to your report dated the 13th instant, this office has to state that a telegram signed by myself was sent to you to-day, as follows:

"Space in forepeak schooner Kenwood, used for chain locker, may be deducted as space used exclusively for anchor gear, if words 'certified for anchor gear' be permanently cut, as provided for by regulations."

Your report shows that the chain locker in question is located in the forepeak of the lower hold, is constructed for the express purpose of holding the chain, and is not capable of use for any other purpose.

Action may be taken by you in accordance with the telegram.

Respectfully,

E. T. CHAMBERLAIN, Commissioner.

COLLECTOR OF CUSTOMS, Boston, Mass.

THE action of the Aero Club, of Paris, in finally deciding to award the prize of 100,000 francs offered by M. Deutsch, for the invention of a dirigible balloon, to M. Santos-Dumont, is of more than passing interest. It signifies, if French enthusiasm is not at fault, that the Brazilian has invented a practical dirigible airship. It marks the first successful step towards aerial navigation. The balloon used by Santos-Dumont may, it is true, have many faults, but that he has discovered the principle necessary for traveling in the air seems proved. Development along the lines which he has originated may be expected, in time, to accomplish the production of a really serviceable balloon. All this is, of course, premised upon the care with which the Aero Club fulfilled its duty, but since it is well known that the successful inventor has several rivals among the membership, it may be assumed that the jury of award did not err greatly in presuming in his favor.

THE HEATING VALUE OF FUEL.

Why is one pound of coal worth more or less than another, and which of several samples of coal is worth most for fuel purposes? These are questions with which the engineer is often confronted, and the answer is often difficult to give, even with all the help which modern science has to offer.

It should be understood that a fuel is a substance containing carbon and hydrogen in varying proportions, and ready under suitable conditions to combine with oxygen. It is in this act of combination with oxygen that heat is developed, and the fuel thus becomes of use for the purpose desired. Carbon and hydrogen are, however, far from having the same fuel value. One pound of the former under perfect combustion would develop about 14,500 units, while a pound of the latter under like conditions would give about 62,000 heat units, or more than four times as much per pound.

The heating value of a sample of coal or other fuel depends, therefore, in large measure on the relative proportions of carbon and hydrogen. A fuel rich in the latter may be expected to have a high heating value, and vice versa. The value will also depend on the amount of non-combustible matter or ash, which is present, and on the nature and proportions of various other ingredients which may be present in small amounts. Chief among them are sulphur, iron pyrites, alkaline earths, and water vapor.

Since the heating value of fuel must in a way be fixed by the substances which it contains, it might be thought that the simplest method of determination would be by means of a chemical analysis which would give the proportions of the other chief elements in the composition. Unfortunately for this, however, the heat developed in the combustion of a fuel is found to depend apparently upon the manner in which these various elements are combined, and in which they break up and re-combine with themselves and with oxygen in the process of combustion. Many of the details of this process are still somewhat uncertain in character. Science has not yet succeeded in unraveling the exact nature of some of these steps, and until this is done it will not be possible to accurately determine the heating value of a fuel from a knowledge of its chemical composition. Still, this knowledge is always of great value in connection with a fuel, and through such means at least a fair approximation may be made to its heating value. Into the details of the operation we cannot enter, but the determination is based upon the repeated scientific determination of the heat developed by the perfect combustion or union of carbon with oxygen, and on certain assumptions which are made regarding the details of the chemical process. To sum up, then, for the chemical method, it may be said that an analysis of a fuel is always of interest and value in estimating its heating quality, and that a good approximation may usually be made in this way to its true value. The chief objections, aside from this element of uncertainty, are found in the fact that the services of a chemist are usually necessary, and considerable time, as well as expense, may thus be involved.

In the calorimeter method, the sample of coal is put through the actual operation of combustion in a closed vessel known as a calorimeter or heat meter, the oxygen required being usually provided in the form of pure gas. The heat thus developed is then measured in various ways, and certain corrections for the instrument are then applied and the result is taken as the measure of the heat to be obtained from the sample in question. With the apparatus in hand this method is quickly and readily applied, and with some experience and care in attending to the details of the operation will give fair results, especially for comparing a series of samples where the absolute value is not of so great importance as the relative.

The chief difficulty with this method is found in the fact that, in common with all measurements of heat, great difficulty is often experienced in getting rid of all the sources of error, and in making sure of regular and consistent results. It is often the case that puzzling differences will arise and sometimes of such amount as to throw suspicion on the observation as a whole.

To sum up for this method we may, therefore, say that the heating value may be determined quickly and with fair accuracy, but the necessary equipment as well as some

training in such work are required. At the same time, the needed equipment and training are much less than in the case of a chemical analysis. As between the two, the method by calorimeter is more readily available for the engineer, is much quicker, and will presumably give better results than an attempt at analysis.

This general subject of measurement of the heating value of a fuel should receive more attention from the engineer than has usually been given it. The day is past when we can afford to judge the value of a sample of coal by merely looking at it. The urgency felt on every hand for increased attention to details which may affect economy demands some method of estimating quickly and with fair accuracy the heating value of a given fuel. There is no reason, indeed, why a fuel should not be bargained for on the basis of its heating value. It is heat the engineer wishes to buy not ash or slag, and the fairest possible basis for the adjustment of the price per ton would be found in the heating value per pound.

Other elements, it is true, must enter into the practical question of the value of a fuel. Such are, for example, its mechanical condition and its tendency to break up into particles too small to be economically and efficiently used; its quality as a coking or non-coking coal; its tendency to form a slag or clinker; the readiness or otherwise with which it may be burned under any specified conditions. Such like considerations must often be given due weight in setting the value of availability of a given fuel, but, nevertheless, the heating quality is chief of all, and we may look for an increase in the attention given to its determination, as we are more sharply driven to the study of the conditions affecting economy, and the avoidance of all sources of waste.—The Engineer.

ADMIRALTY CASES.

The admiralty docket for the January term of the United States District Court at Detroit contains thirty-six cases as follows:

James Davidson vs. the Detroit Sulphite Fibre Co., demurrage; Emory J. Vance vs. prop. S. S. Wilhelm, neglect towing; Louisa B. Grummond, executrix, vs. barge Leland, towing; in the matter of the petition of James Davidson et al., owners of steamship Wilhelm, for limitation of liability; Robert and Eugene Schook vs. Francis F. Palms, et al., breach of contract; Harris Baker vs. schooner Nassau, her boats, etc., salvage; Harris Baker and Charles A. Chamberlain vs. lighters Tycoon and Mikado, towing; James Davidson vs. barge Alexander Holly, collision; Clara Sawyer, administratrix, vs. steamer W. P. Ketcham, loss of life; John B. Sperry vs. schooner Anna P. Grover, supplies; Dan H. Huyck vs. tug Champion, supplies; in the matter of the petition of Henry Wineman et al., owners of tug Maggie Ashton, for limitation of liability; Earl Cross vs. schooner Anna P. Grover, wages; James G. Landry vs. Schooner John Miner, wages; James P. Harrow et al., vs. Steamer Argo, her engines, etc., neglect of towing; Charles A. Chamberlain et al., vs. E. E. Naugle, et al., salvage; Henry McMarren vs. Carlin, Stickney & Cram Co., salvage; Morley Stephens vs. schooner James L. Ketcham, wages; William Quinlan et al., vs. steamer Sir William Siemens, collision; William Waugh vs. steamer A. L. Hopkins, wages; Western Transit Co., vs. tug Champion and schooner William H. Rounds, collision; the Jenks Ship Building Co. vs. schooner S. A. Wood, collision; Henry McMarren vs. steamer Myrtle M. Ross and cargo of coal, salvage; William D. Ragan vs. tug Charley Greenwich, supplies; Harris Baker and Charles A. Chamberlain vs. barges Jupiter and Eureka, towing; Walker Bros. vs. barge Eureka, towage; Anthony T. May vs. 969 telegraph poles et al., demurrage; Albert C. Smith vs. Kelly Island Lime and Transport Co., breach of contract; Frank J. Walker et al. vs. schooner Bertha Barnes, towing; the Pawnee Boat Co. vs. steamer E. C. Cope, collision; George Nester et al. vs. propeller New Orleans, collision; William Gilmore et al. vs. schooner William Case, materials and labor; Margaret M. Rouelle, ex., vs. barge Lillie May, towage; William Dulac et al. vs. steamer Orion, collision; Daniel W. Yeomans vs. tug Louise, wages.

WINTER FLEET AT MILWAUKEE.

The Milwaukee winter fleet is greater than for several seasons past, numbering 126 vessels all told, of which 76 are steamers, 16 tow barges, and 34 schooners. Following are the names of the vessels:

Steamers—Ore, grain and coal carriers: Appomattox, Boyce M. H., Britannic, Black, C. A., Briton, Craig, John, Colby J. L., Christopher, Crescent City, Cambria, Duncan, John, Denver, Eddy C. A., Flower R. P., Fairbairn Sir William, Flint O. T., Grecian, Griffin, Gilchrist, Gilchrist J. C., Germanic, Gogebic, Hiawatha, Harper John, Houghton Douglass, Iosco, Johnson, H. J., Lackawana, LaSalle, Mariska, Mitchell Samuel, Manchester, Mecosta, Marquette, Merida, Mohegan, Marion, Mesaba, Neosho, Nicaragua, Olympia, Peck E. M., Pope, E. C., Pabst Fred, Packer R. A., Roumania, Schuck R. E., Schlesinger F., Topeka, Uganda, Uranus, Vance F. L., Veronica, Volunteer, Vail Walter, Vulcan, Wolf W. H., Waldo, L. C., Wright A. P., Wolvin A. B., Watt James. General course freighters: Burnham George, Curtis C. F., Hilton, Keltin Minnie E., Ketcham W. P., Marion, Neff, C. S. Neff M. C., Nebraska, Madden Lizzie, Rand, Ralph P. J., Schroeder John, Shores Adella, Thompson E. E., Westcott J. W.—76.

Barges:—Armenia, Antrim, Baltic, Fassett T. S., Grummond Grace, Holland N. C., Harold, Hale O. J., Iron Cliff, Moravia, Mingoe, Mautene, Noquebay, Pennington B. L., Olive Jeannette, Santiago.—16.

Schooners:—Aldrich William, A. B. C. F. M., Beers Alice M., Black Hawk, Boyce G. J., Cook, Mary E., City of Grand Rapids, Clara, City of Sheboygan, Cape Horn, Coates L. B., Day Eliza, Emily and Eliza, Elida, Grant Levi, Hustler, Hackley C. H., Kewaunee, Minerva, Monitor, Mason R. P., Mars, Oneida, Stafford, Simmons Z. G., Simpson, Lucia A., Taylor J. V., Vermont, Wanderer, Westcott G. W., Wolverine, Wyman C. E., Winters Jesse.—34.

OFFICE OF THE BOARD OF PUBLIC WORKS, Milwaukee, December 10, 1901. Sealed proposals will be received at this office until Friday, January 10, 1902, at 10:30 o'clock a. m., for furnishing the propelling engine and its appurtenances, the steam fire pumps and the Scotch marine boilers for a new steel fire boat for the city of Milwaukee, according to plans and specifications on file in this office. Bidders desiring plans and specifications will be required to deposit the sum of \$50.00 as a guarantee for the safe return of the same. For further particulars apply to the Board of Public Works, Milwaukee, Wis., or to W. J. Wood, Naval Architect, 269 Fifth Avenue, Chicago, Ill. 52-1



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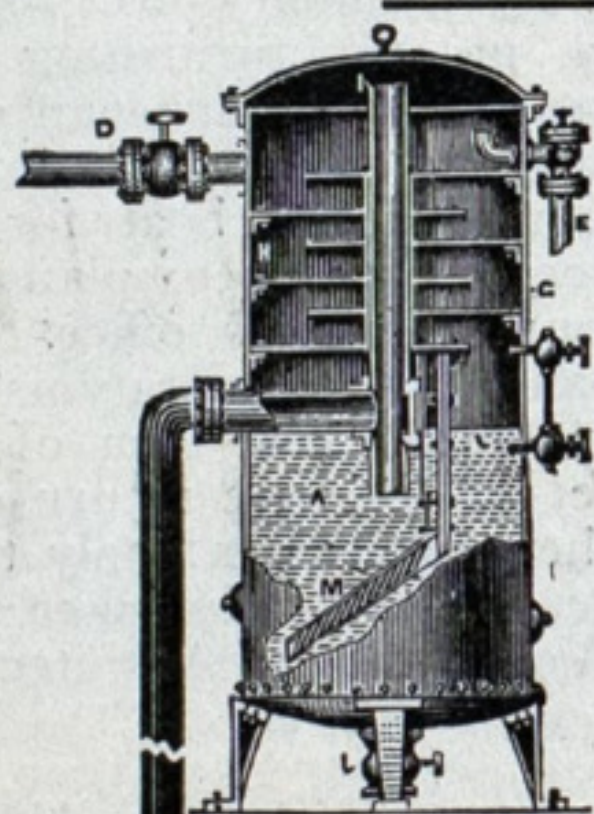
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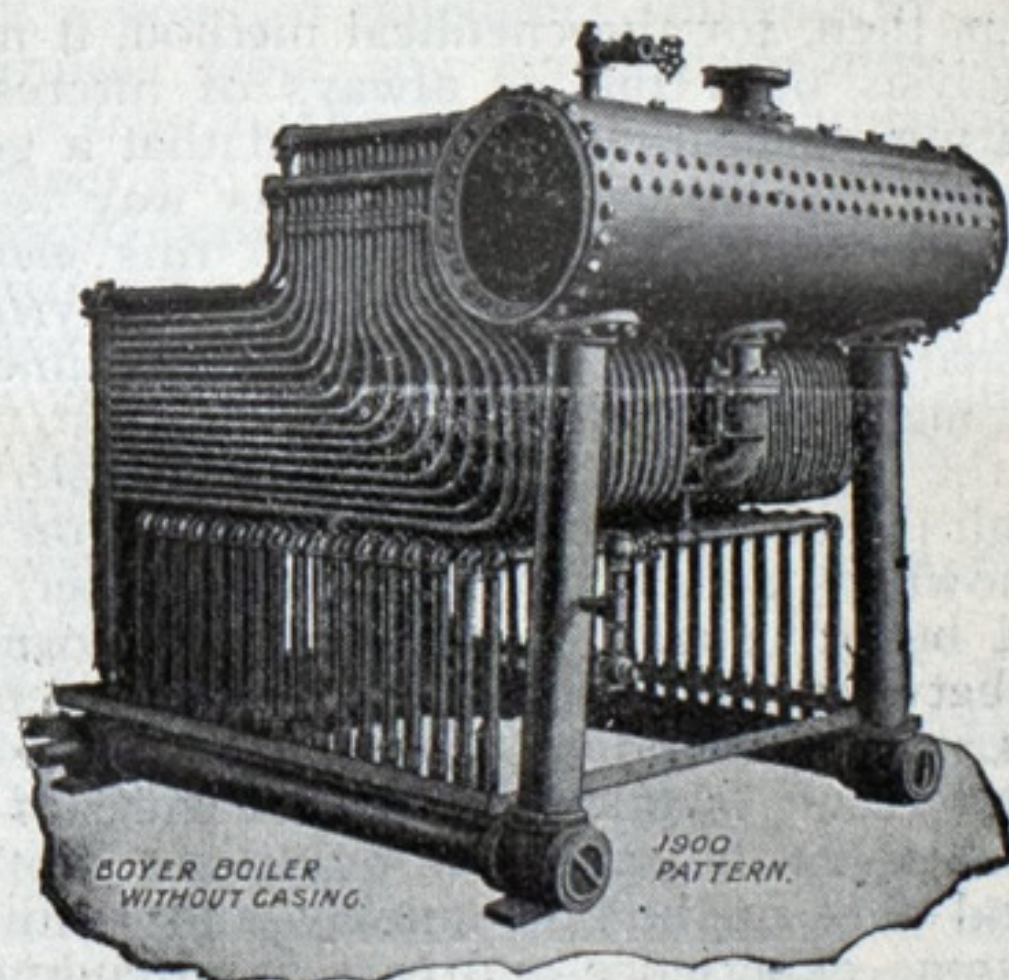
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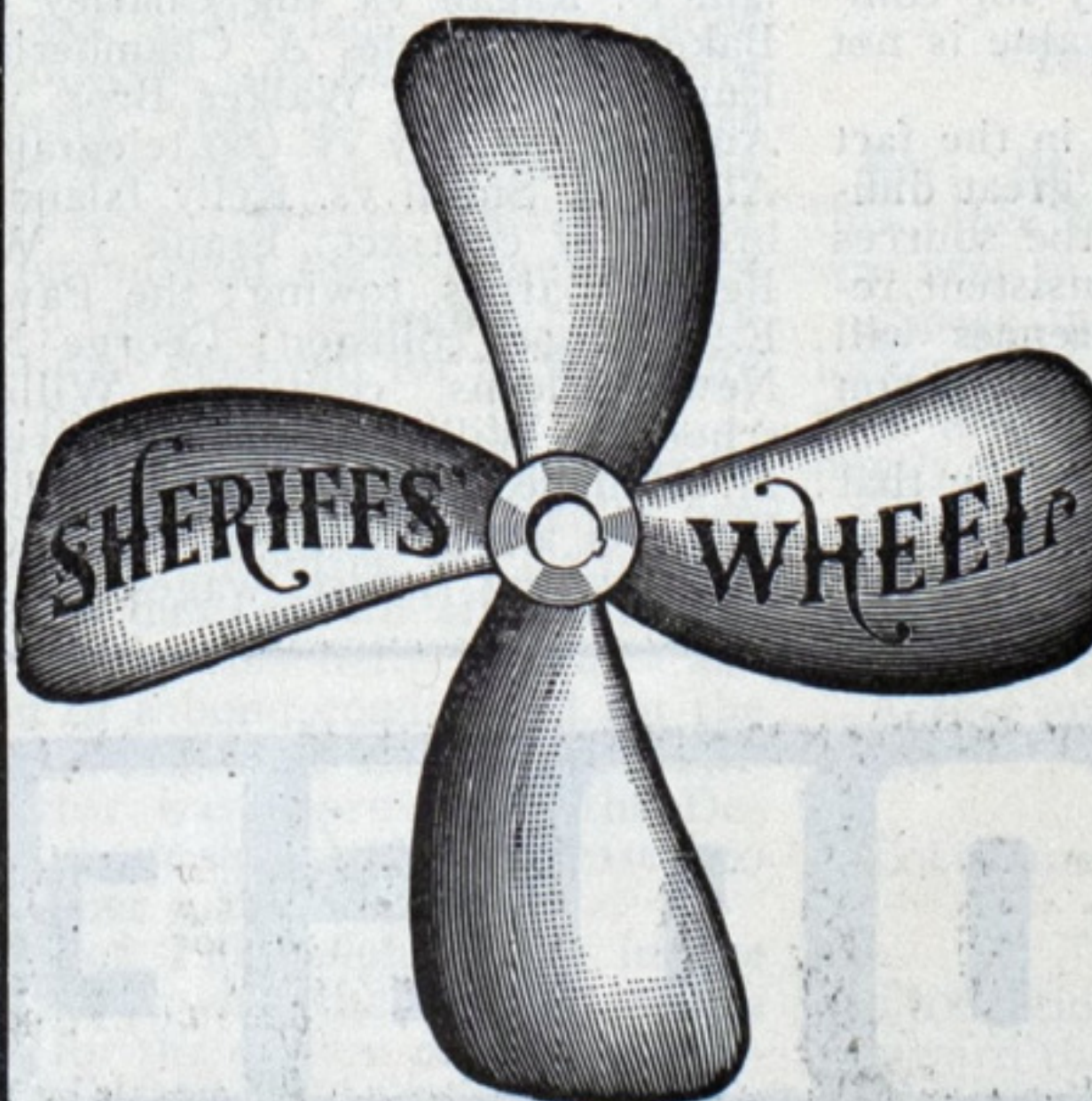
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REPORTED BY THE LOOKOUT.

The owners of the land heretofore involved in the Breitung estate at Negaunee, Mich., have organized under the name of the Mary Juliette Mining Co. for the purpose of exploring lands under their control in the Negaunee hematite range. Charles C. Jones is general manager and James F. Foley will direct mining operations, which will begin at once on the property known as the New York hematite. It is also the intention to re-open the Milwaukee and Davis mines directly on the mineral belt.

Ashtabula retains her title as the greatest ore receiving port on the globe. Of the 230,000 tons of ore shipped from Canada to the United States this year, 88,486 tons went to Ashtabula. The increase of ore receipts over last year, which was also a record breaker, was 297,349 tons. Coal shipments show a decrease as compared with last season of 108,890 tons, the total shipment for 1901, including fuel, aggregating 1,484,335 tons. During the season 950 tons of coke were shipped and 25,945 tons of stone. During the year 1,549 vessels entered and 1,593 cleared from Ashtabula.

The Elder-Dempster Steamship Co., through its Canadian manager, Mr. D. W. Campbell, has contracted with the Dominion Coal Co. of Sydney, to carry coal to ports in Italy for an indefinite period. The Dominion Coal Co., through A. Alexander Dick, has sold a large quantity of coal in Italy, and indications point to a permanent market for Cape Breton coal in that country, so it is altogether likely that a fleet of steamships will be regularly employed in carrying coal from Sydney or Louisburg to ports in Italy, and the Elder-Dempster Line will inaugurate the service within a few weeks. The first cargo will probably be shipped from Louisburg.

The large concerns at Duluth, Milwaukee and other lake ports that receive coal by water and distribute it throughout the northwest are gradually being bought up by the combinations. Only a short time ago it was announced that the Fairmount Coal Co. (large West Virginia mining interest) had purchased two-thirds of the stock of the Northwestern Fuel Co., and now comes the report that the Pittsburg Coal Co. has bought three-quarters of the stock of the C. Reis Coal Co., operating at

Ashland, Escanaba, Manitowoc and Sheboygan. The Pittsburg Coal Co. has also purchased control of the business of Whitnall & Rademaker, of Milwaukee. This latter concern does not handle a very large amount of soft coal, but they are large dealers in hard coal. Thus the business of chartering ships for lake coal and looking after the distribution of it is gradually falling into a few hands. The Milwaukee & Western Fuel Co. (Uhrig interest) is now about the only large distributing concern in the upper lake region that is not controlled by the producing combinations.

STATEMENT OF THE VISIBLE SUPPLY OF GRAIN.

As compiled by George F. Stone, Secretary Chicago Board of Trade, December 21:

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	6,083,000	820,000	927,000	41,000	131,000
" afloat.....	3,963,000	277,000	222,000	.....	357,000
Chicago.....	6,671,000	5,665,000	1,000,000	1,032,000	110,000
" afloat.....	417,000	.....	.....	77,000	.....
Detroit.....	923,000	227,000	22,000	199,000	44,000
Duluth.....	8,627,000	395,000	119,000	428,000	247,000
" afloat.....	511,000	.....	.....	.....	.....
Fort William, Ont.....	1,677,000	.....	.....	.....	.....
Milwaukee.....	409,000	85,000	162,000	61,000	184,000
Port Arthur, Ont.....	70,000	.....	.....	.....	.....
Toledo.....	392,000	591,000	806,000	267,000	.....
Toronto.....	38,000	.....	59,000	.....	1,000
On Canals.....	46,000	3,000	112,000	37,000	50,000
Grand Total.....	58,805,000	11,131,000	5,657,000	2,560,000	1,991,000
Corresponding Date, 1900.....	61,473,000	7,564,000	9,357,000	1,268,000	2,859,000
Increase for week.....	.....	.....	.....	.....	.....
Decrease ".....	551,000	56,000	85,000	78,000	867,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

ASTRONOMY IN THE UNITED STATES.

"America is doing more and better work in astronomy than the whole of Europe combined. S. H. Burnham is

the greatest double-star astronomer that lives or ever lived," says Sir Robert Boll, professor of mathematics and astronomy at Cambridge University.

"In astronomical matters," he said, "we in Europe all look to America. The primacy of America in these matters is largely due to the climate, which is favorable to astronomical observation, but much more to the wealth of the American people and the large sums of money that they devote to astronomical apparatus. I must admit, however, that it is also due in part to the superior talents of the American astronomers. Both the Yerkes telescope and the Lick telescope are larger than anything in Europe. It may sound like fulsome flattery, but it is a cold fact, that America is doing more and better work in astronomy than the whole of Europe together."

Government Proposals.

TREASURY DEPARTMENT, U. S. LIFE-SAVING SERVICE, Washington, D. C., December 17, 1901. Sealed proposals will be received at this office until 2:00 o'clock p. m. of Tuesday, January 7, 1902, and then publicly opened, for the construction of foundations, retaining walls, etc., for a life-saving station at Buffalo, New York. Specifications and drawings, forms of proposal, etc., can be obtained upon application to the Superintendents of Construction of Life-Saving Stations, 17 State Street, New York City; to the Superintendent of the 10th Life-Saving District, Custom House, Buffalo, New York; to the Assistant Inspector 10th and 11th Life-Saving Districts, Room 204 Postoffice Building, Detroit, Michigan; to the keeper of the Cleveland Life-Saving Station, Cleveland, Ohio; or to this office. S. I. KIMBALL, General Superintendent. 52.

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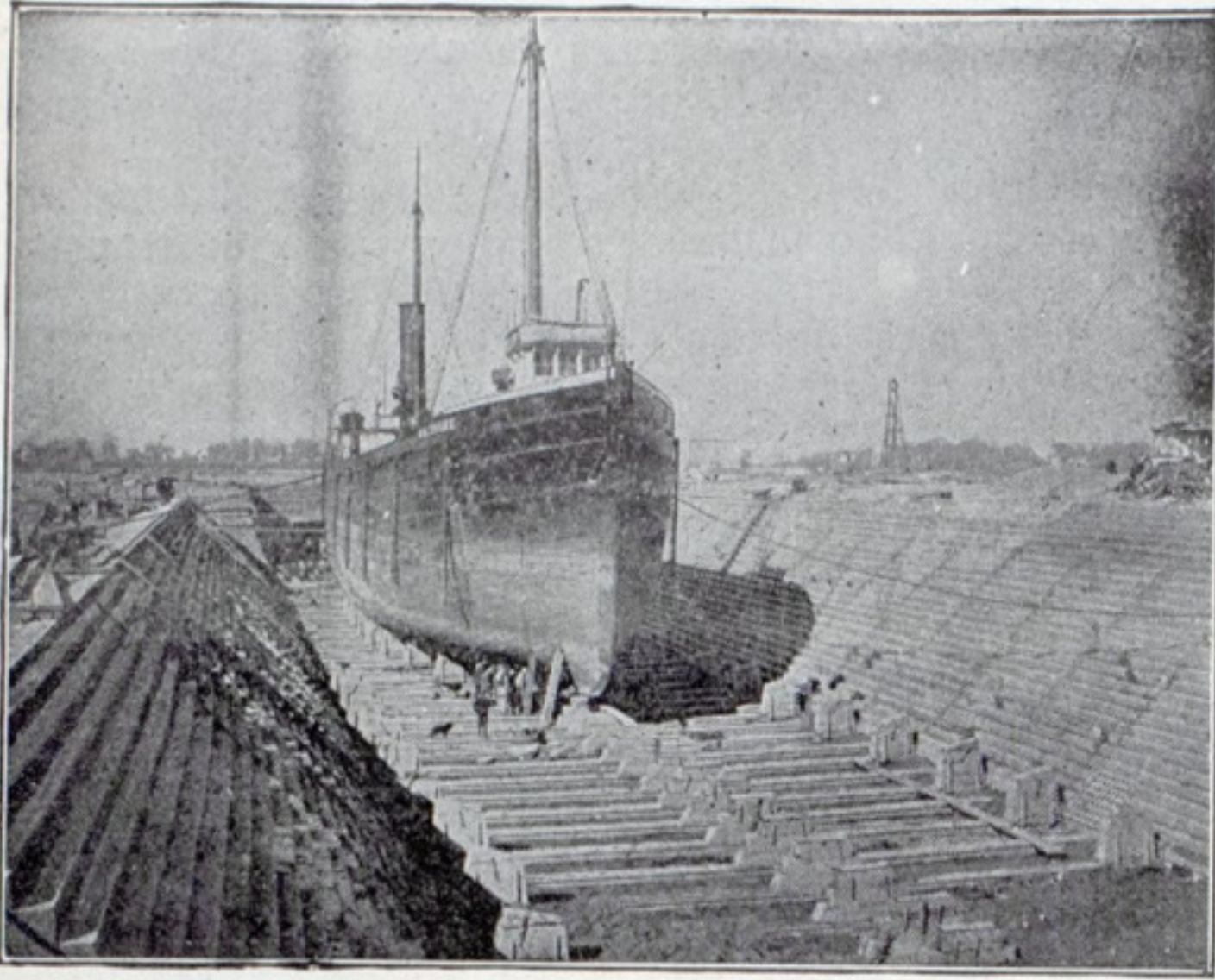
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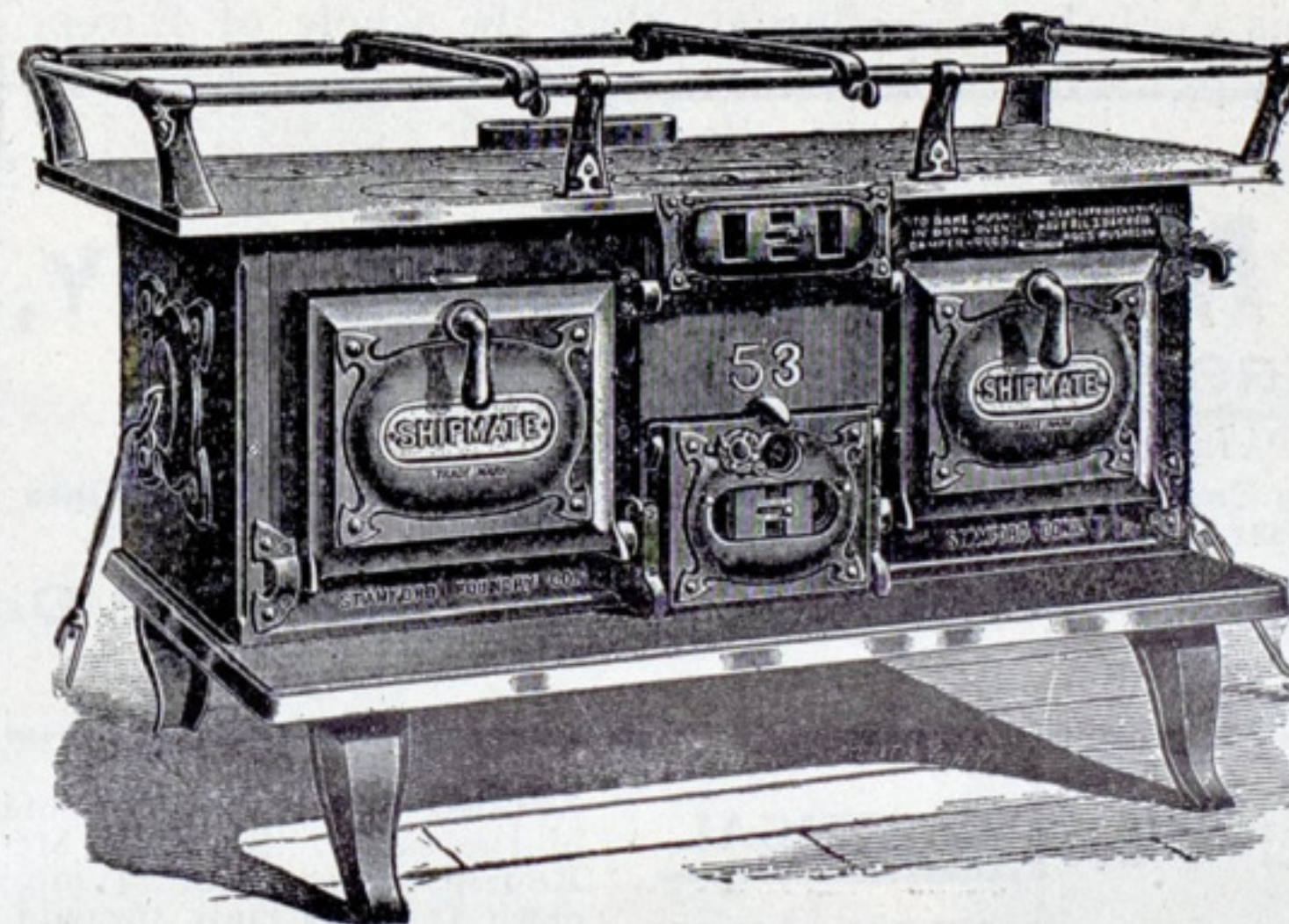
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